Test Bank for Data and Analytics in Accounting 1st Edition by Dzuranin

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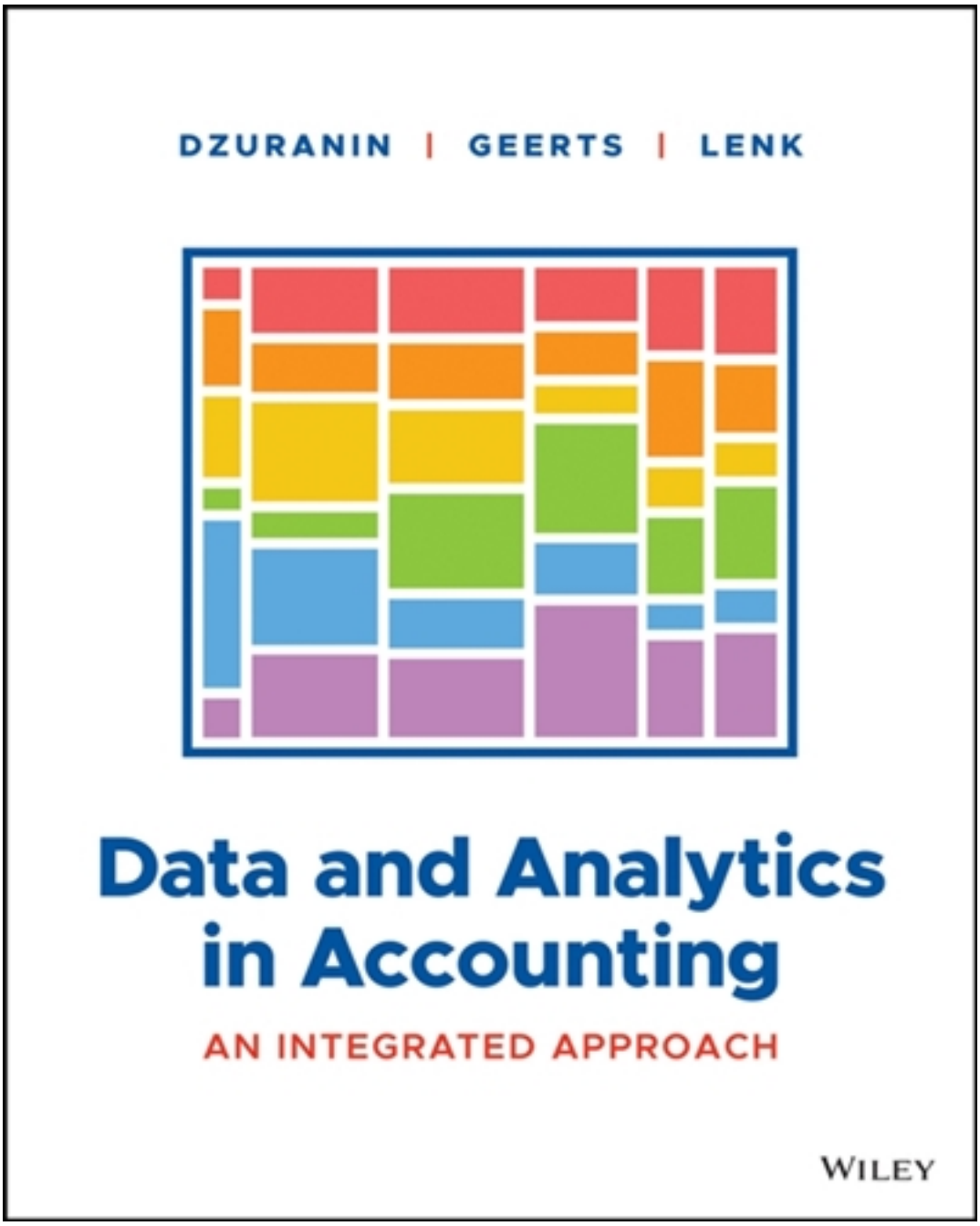

Test Bank

Data and Analytics in Accounting, 1e **(Dzuranin)**
Chapter 2 Foundational Data Analysis Skills

1) A relational database
A) is a collection of logically related data.
B) stores data in individual tables that can be linked together.
C) allows data to be retrieved, manipulated, and updated.
D) All of these answer choices are correct.
Answer: D
Explanation: All of these answer choices are correct.
Diff: 1
LO: 2-1
Bloom: K
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

2) Database tables are comprised of rows and columns. The difference between a row and a column is that
A) a row represents one record or instance of the table's object, and a column reflects the attributes.
B) a row reflects the attributes, and a column represents a single data item.
C) a row describes aspects of a resource, events, or agents of the object of interest, and a column reflects the attributes.
D) a row represents one record or instance of the table's object, and a column represents a single field.
Answer: A
Explanation: A row in a table represents one record or instance of the table's object. The columns in a database table reflect the attributes, which are the data fields that describe different aspects of the records.
Diff: 1
LO: 2-1
Bloom: K
Min.: 1
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3) Identifiable objects that have economic value to the business entity are called
A) events.
B) resources.
C) agents.
D) tables.
Answer: B
Explanation: Identifiable objects that have economic value to the business entity are called resources.
Diff: 1
LO: 2-1
Bloom: K
Min.: 1
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4) Examples of attributes in a database table storing sales data are
A) date of sales, sales quantity, and sales unit price.
B) employee address, sales order number, and sales unit price.
C) inventory on hand, name of salesperson, and employee address.
D) customer number, reorder quantity level, and sales order number.
Answer: A
Explanation: Sales data should not store the employee address, inventory on hand, or reorder quantity level.
Diff: 1
LO: 2-1
Bloom: K
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

5) Bridgeport University is designing a new information system to track purchasing activity. The following database tables have been created. What are the primary keys to each of the tables?

VendorRecord
VendorID
VendorName
Street
City
State
ZIP

POData
PONumber
PODate
VendorID
POAmount

InvoiceData
InvoiceNumber
InvoiceDate
VendorID
InvoiceAmount
PONumber

A) VendorName is the primary key for VendorRecord; PONumber is the primary key for POData; and PONumber is the primary key for InvoiceData.
B) VendorID is the primary key for VendorRecord; PONumber is the primary key for POData; and InvoiceNumber is the primary key for InvoiceData.
C) VendorName is the primary key for VendorRecord; PONumber is the primary key for POData; and VendorID is the primary key for InvoiceData.
D) VendorID is the primary key for VendorRecord; VendorID is the primary key for POData; and InvoiceDate is the primary key for InvoiceData.
Answer: B
Explanation: In A, PONumber is the foreign key for InvoiceData; in C, VendorName is an attribute to Vendor Record; and in D, VendorID is a foreign key for POData.
Diff: 1
LO: 2-1
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

6) Bridgeport University is designing a new information system to track purchasing activity. The following database tables have been created. What are the foreign keys to each of the tables?

VendorRecord
VendorID
VendorName
Street
City
State
ZIP

POData
PONumber
PODate
VendorID
POAmount

InvoiceData
InvoiceNumber
InvoiceDate
VendorID
InvoiceAmount
PONumber

A) VendorRecord has no foreign keys; VendorID is the foreign key for POData; and VendorID is the foreign key for InvoiceData.
B) VendorID is the foreign key for VendorRecord; PONumber is the foreign key for POData; and InvoiceNumber is the foreign key for InvoiceData.
C) VendorName is the foreign key for VendorRecord; VendorID is the foreign key for POData; and VendorID is the foreign key for InvoiceData.
D) VendorRecord has no foreign keys; VendorID is the foreign key for POData; and VendorID and PONumber are the foreign keys for InvoiceData.
Answer: D
Explanation: In A, VendorID is the primary key for VendorRecord; in B, PONumber is the primary key for POData; and in C, VendorName is an attribute to VendorRecord.
Diff: 2
LO: 2-1
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

7) Bridgeport University is designing a new information system to track purchasing activity. The following database tables have been created.

POData
PONumber
PODate
VendorID
POAmount

InvoiceData
InvoiceNumber
InvoiceDate
VendorID
InvoiceAmount
PONumber

POData is the left table and InvoiceData is the right table. What join type would be used to determine if there are invoices that do not have a matching purchase order (PO)?
A) Left join
B) Right join
C) Inner join
D) Full join
Answer: B
Explanation: Left join will show all POData and matching invoice data. Inner join will only show matching POData and InvoiceData rows. Full join will show all POData and all Invoice Data rows.
Diff: 2
LO: 2-1
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

8) Bridgeport University is designing a new information system to track purchasing activity. The following database tables have been created.

POData
PONumber
PODate
VendorID
POAmount

InvoiceData
InvoiceNumber
InvoiceDate
VendorID
InvoiceAmount
PONumber

POData is the left table and InvoiceData is the right table. What join type would be used to show only the invoices that have matching purchase orders (POs)?
A) Left join
B) Right join
C) Inner join
D) Full join
Answer: C
Explanation: Left join will show all POData and matching invoice data. Right join will show all InvoiceData rows that have matching POData rows. Full join will show all POData and Invoice Data rows.
Diff: 2
LO: 2-1
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

9) Temple Consulting is a professional services company. Employee training is critical to their success in their knowledge industry. The HRIS system tracks employee training. The HRIS database contains the following tables:

EmployeeData

EmployeeID	First Name	Last Name	HireDate
10343	Sandra	Song	2017-02-02
10354	Nicole	Kim	2018-05-07
10385	Samuel	Walter	2018-09-14
10399	Jeffrey	King	2019-04-16

TrainingData

CourseID	EmployeeID	DateCompleted
543	10343	2022-05-05
543	10354	2022-05-05
543	10385	2022-10-11
754	10343	2022-11-09
754	10354	2022-01-08
754	10385	2022-09-11
939	10343	2022-11-13

EmployeeData is the left table and TrainingData is the right table. If the EmployeeID field is used for the join, performing an inner join with EmployeeData and TrainingData will result in
A) 7 rows.
B) 0 rows.
C) 4 rows.
D) 6 rows.
Answer: A
Explanation: Inner join will show all rows from both tables with matching values. The join will result in the following:

EmployeeID	First Name	Last Name	HireDate	CourseID	DateCompleted
10343	Sandra	Song	2017-02-02	543	2022-05-05
10343	Sandra	Song	2017-02-02	754	2022-11-09
10343	Sandra	Song	2017-02-02	939	2022-11-13
10354	Nicole	Kim	2018-05-07	543	2022-05-05
10354	Nicole	Kim	2018-05-07	754	2022-01-08
10385	Samuel	Walter	2018-09-14	543	2022-10-11
10385	Samuel	Walter	2018-09-14	754	2022-09-11

Diff: 2
LO: 2-1
Bloom: AP
Min.: 1
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10) Temple Consulting is a professional services company. Employee training is critical to their success in their knowledge industry. The HRIS system tracks employee training. The HRIS database contains the following tables:

EmployeeData

EmployeeID	First Name	Last Name	HireDate
10343	Sandra	Song	2017-02-02
10354	Nicole	Kim	2018-05-07
10385	Samuel	Walter	2018-09-14
10399	Jeffrey	King	2019-04-16

TrainingData

CourseID	EmployeeID	DateCompleted
543	10343	2022-05-05
543	10354	2022-05-05
543	10385	2022-10-11
754	10343	2022-11-09
754	10354	2022-01-08
754	10385	2022-09-11
939	10343	2022-11-13

EmployeeData is the left table and TrainingData is the right table. If the EmployeeID field is used for the join, performing a left join with EmployeeData and TrainingData will result in
A) 7 rows.
B) 8 rows.
C) 4 rows.
D) 6 rows.

Answer: B
Explanation: A left join returns all records from EmployeeTable and the matching records from TrainingData. The join will result in the following:

EmployeeID	First Name	Last Name	HireDate	CourseID	DateCompleted
10343	Sandra	Song	2017-02-02	543	2022-05-05
10343	Sandra	Song	2017-02-02	754	2022-11-09
10343	Sandra	Song	2017-02-02	939	2022-11-13
10354	Nicole	Kim	2018-05-07	543	2022-05-05
10354	Nicole	Kim	2018-05-07	754	2022-01-08
10385	Samuel	Walter	2018-09-14	543	2022-10-11
10385	Samuel	Walter	2018-09-14	754	2022-09-11
10399	Jeffrey	King	2019-04-16		

Diff: 2
LO: 2-1
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

11) Temple Consulting is a professional services company. Employee training is critical to their success in their knowledge industry. The HRIS system tracks employee training. The HRIS database contains the following tables:

EmployeeData

EmployeeID	First Name	Last Name	HireDate
10343	Sandra	Song	2017-02-02
10354	Nicole	Kim	2018-05-07
10385	Samuel	Walter	2018-09-14
10399	Jeffrey	King	2019-04-16

TrainingData

CourseID	EmployeeID	DateCompleted
543	10343	2022-05-05
543	10354	2022-05-05
543	10385	2022-10-11
754	10343	2022-11-09
754	10354	2022-01-08
754	10385	2022-09-11
939	10343	2022-11-13

EmployeeData is the left table and TrainingData is the right table. If the EmployeeID field is used for the join, performing a right join between EmployeeData and TrainingData will results in
A) 7 rows.
B) 0 rows.
C) 4 rows.
D) 6 rows.
Answer: A
Explanation: A right join will return all records from TrainingData and the matching records from EmployeeTable. The join will result in the following:

EmployeeID	First Name	Last Name	HireDate	CourseID	DateCompleted
10343	Sandra	Song	2017-02-02	939	2022-11-13
10343	Sandra	Song	2017-02-02	754	2022-11-09
10343	Sandra	Song	2017-02-02	543	2022-05-05
10354	Nicole	Kim	2018-05-07	754	2022-01-08
10354	Nicole	Kim	2018-05-07	543	2022-05-05
10385	Samuel	Walter	2018-09-14	754	2022-09-11
10385	Samuel	Walter	2018-09-14	543	2022-10-11

Diff: 2
LO: 2-1
Bloom: AP
Min.: 1
AACSB: Analytic
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12) Temple Consulting is a professional services company. Employee training is critical to their success in their knowledge industry. The HRIS system tracks employee training. The HRIS database contains the following tables:

EmployeeData

EmployeeID	First Name	Last Name	Position	HireDate
10343	Sandra	Song	Manager	2017-02-02
10354	Nicole	Kim	Director	2018-05-07
10385	Samuel	Walter	Manager	2018-09-14
10399	Jeffrey	King	Manager	2019-04-16

TrainingData

CourseID	EmployeeID	DateCompleted
543	10343	2022-05-05
543	10354	2022-05-05
543	10385	2022-10-11
754	10343	2022-11-09
754	10354	2022-01-08
754	10385	2022-09-11
939	10343	2022-11-13

EmployeeData is the left table and TrainingData is the right table. What would be the most appropriate join type to determine what employee has not taken a course?
A) EmployeeData left join with TrainingData
B) EmployeeData inner join with TrainingData
C) TrainingData right join with TrainingData
D) None of the answer choices are correct.
Answer: A
Explanation: A left join returns all records from the left table and matching records from the right table. Any null values will indicate that the employee has not taken a course.
Diff: 2
LO: 2-1
Bloom: AP
Min.: 1
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13) Temple Consulting is a professional services company. Employee training is critical to their success in their knowledge industry. The HRIS system tracks employee training. The HRIS database contains the following tables:

EmployeeData

EmployeeID	First Name	Last Name	Position	HireDate
10343	Sandra	Song	Manager	2017-02-02
10354	Nicole	Kim	Director	2018-05-07
10385	Samuel	Walter	Manager	2018-09-14
10399	Jeffrey	King	Manager	2019-04-16

TrainingData

CourseID	EmployeeID	DateCompleted
543	10343	2022-05-05
543	10354	2022-05-05
543	10385	2022-10-11
754	10343	2022-11-09
754	10354	2022-01-08
754	10385	2022-09-11
939	10343	2022-11-13

If EmployeeData is the left table and TrainingData is the right table, what would be the most appropriate join type to determine which courses were taken by employees who are managers?
A) EmployeeData left join with TrainingData
B) EmployeeData inner join with TrainingData
C) EmployeeData right join with TrainingData
D) None of the answer choices are correct.
Answer: B
Explanation: Inner join shows all rows from both tables with matching values. There will not be any null values.
Diff: 2
LO: 2-1
Bloom: AP
Min.: 1
AACSB: Analytic
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14) Eagle Wings Motors is an automobile manufacturer. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the sales order table:

	A	B	C	D	E	F
1	**SalesID**	**Product**	**Location**	**SalesDate**	**Qty**	**UnitPrice**
2	203211	Premium	NY	2021-02-02	20	$45,100
3	203212	Economy	CA	2022-01-07	40	$25,200
4	203213	Luxury	FL	2022-03-14	13	$76,000
5	203214	Luxury	CA	2022-03-16	15	$76,900
…	…	…	…	…	…	…
2029	205304	Economy	MA	2022-11-16	33	$23,100
2030	205303	Premium	LA	2022-12-17	40	$42,700

Line 2030 is the last sales record in the file. What is the Excel formula that will determine the total sales quantity of premium cars?
A) =SUM(E2:E2030,"Premium",B2:B2030)
B) =SUMIF(E2:E2030,"Premium",B2:B2030)
C) =SUMIF(B2:B2030,"Premium",E2:E2030)
D) =SUMIF(E2:E2030,B2:B2020,"Premium")
Answer: C
Explanation: A and B will result in an error in the formula since column B is not numeric. D will result in an error in the formula.
Diff: 2
LO: 2-2
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

15) Eagle Wings Motors is an automobile manufacturer. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the sales order table:

	A	B	C	D	E	F
1	**SalesID**	**Product**	**Location**	**SalesDate**	**Qty**	**UnitPrice**
2	203211	Premium	NY	2021-02-02	20	$45,100
3	203212	Economy	CA	2022-01-07	40	$25,200
4	203213	Luxury	FL	2022-03-14	13	$76,000
5	203214	Luxury	CA	2022-03-16	15	$76,900
…	…	…	…	…	…	…
2029	205304	Economy	MA	2022-11-16	33	$23,100
2030	205303	Premium	LA	2022-12-17	40	$42,700

Line 2030 is the last sales record in the file. What is the Excel formula that will calculate the total count of sales orders in the state of California?
A) =COUNT(C2:C2030, "CA", A2:A2020)
B) =COUNTIF(C2:C2030, "CA")
C) =COUNTIF(B2:B2030, "CA")
D) =COUNTIF(B2:B2030, C2:C2020, "CA")
Answer: B
Explanation: A will result in an error in the formula. C will result in 0 since there is no "CA" in column B. D will result in an error in the formula.
Diff: 2
LO: 2-2
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

16) Eagle Wings Motors is an automobile manufacturer. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the sales order table:

	A	B	C	D	E	F
1	**SalesID**	**Product**	**Location**	**SalesDate**	**Qty**	**UnitPrice**
2	203211	Premium	NY	2021-02-02	20	$45,100
3	203212	Economy	CA	2022-01-07	40	$25,200
4	203213	Luxury	FL	2022-03-14	13	$76,000
5	203214	Luxury	CA	2022-03-16	15	$76,900
…	…	…	…	…	…	…
2029	205304	Economy	MA	2022-11-16	33	$23,100
2030	205303	Premium	LA	2022-12-17	40	$42,700

Line 2030 is the last sales record in the file. What is the Excel formula that will calculate the total sales quantity for the state of New York for July 1, 2022 and onwards?
A) =SUMIF(C2:C2030, "CA", D2:D2030,">2022-06-30", F2:F2030)
B) =SUMIFS(C2:C2030, "CA", D2:D2030,">2022-06-30", F2:F2030)
C) =SUMIFS(E2:E2030,C2:C2030,"NY", D2:D2030,">2022-06-30")
D) =SUM(E2:E2030,C2:C2030,"NY", D2:D2030,">2022-06-30")
Answer: C
Explanation: A and B will result in an error in the formula since column C is not numeric. D will result in an error in the formula.
Diff: 2
LO: 2-2
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

17) Eagle Wings Motors is an auto manufacturer. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the sales order table:

	A	B	C	D	E	F
1	**SalesID**	**Product**	**Location**	**SalesDate**	**Qty**	**UnitPrice**
2	203211	Premium	NY	2021-02-02	20	$45,100
3	203212	Economy	CA	2022-01-07	40	$25,200
4	203213	Luxury	FL	2022-03-14	13	$76,000
5	203214	Luxury	CA	2022-03-16	15	$76,900
…	…	…	…	…	…	…
2029	205304	Economy	MA	2022-11-16	33	$23,100
2030	205303	Premium	LA	2022-12-17	40	$42,700

Line 2030 is the last sales record in the file. What is the Excel formula that will calculate the average unit price of luxury cars sold?
A) =AVEIF(F2:F2030, B2:B2030,"Luxury")
B) =AVERAGEIF(F2:F2030, B2:B2030,"Luxury")
C) =AVERAGE(B2:B2030,"Luxury", F2:F2030)
D) =AVERAGEIF(B2:B2030,"Luxury", F2:F2030)
Answer: D
Explanation: A, B, and C will result in an error in the formula.
Diff: 2
LO: 2-2
Bloom: AP
Min.: 1
AACSB: Analytic
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18) Eagle Wings Motors is an automobile manufacturer. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the sales order table:

	A	B	C	D	E	F
1	**SalesID**	**Product**	**Location**	**SalesDate**	**Qty**	**UnitPrice**
2	203211	Premium	NY	2021-02-02	20	$45,100
3	203212	Economy	CA	2022-01-07	40	$25,200
4	203213	Luxury	FL	2022-03-14	13	$76,000
5	203214	Luxury	CA	2022-03-16	15	$76,900
…	…	…	…	…	…	…
2029	205304	Economy	MA	2022-11-16	33	$23,100
2030	205303	Premium	LA	2022-12-17	40	$42,700

Line 2030 is the last sales record in the file. What is the Excel formula that will calculate the total count of sales orders in the state of California and New York?
A) =COUNTIF(C2:C2030, "CA") + COUNTIF(C2:C2030, "NY")
B) =COUNTIFS(C2:C2030, "CA", C2:C2030, "NY")
C) =COUNTIF(C2:C2030, "CA", C2:C2030, "NY")
D) =COUNTIF(C2:C2030, "CA,NY")
Answer: A
Explanation: B and D will result in 0. C will result in an error in the formula.
Diff: 3
LO: 2-2
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

19) Eagle Wings Motors is an automobile manufacturer. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the sales order table:

	A	B	C	D	E	F
1	**SalesID**	**Product**	**Location**	**SalesDate**	**Qty**	**UnitPrice**
2	203211	Premium	NY	2021-02-02	20	$45,100
3	203212	Economy	CA	2022-01-07	40	$25,200
4	203213	Luxury	FL	2022-03-14	13	$76,000
5	203214	Luxury	CA	2022-03-16	15	$76,900
…	…	…	…	…	…	…
2029	205304	Economy	MA	2022-11-16	33	$23,100
2030	205303	Premium	LA	2022-12-17	40	$42,700

Line 2030 is the last sales record in the file. What is the Excel formula that will calculate the number of rows that have the Location field as blank?
A) =COUNTBLANK(C3:C2030)
B) =COUNTA(C3:C2030)
C) =COUNT(C3:C2030, "")
D) =COUNTBLANK(C3:C2030, "")
Answer: A
Explanation: B will count the number of cells containing text. C will count the number of cells in a range that contain numbers. D will result in an error in the formula.
Diff: 2
LO: 2-2
Bloom: AP
Min.: 1
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20) A pivot table has the following components
A) columns, rows, values, and filters.
B) categories, rows, values, and ranges.
C) columns, rows, measures, and filters.
D) dimensions, values, and filters.
Answer: A
Explanation: A pivot table has the following components: columns, rows, values, and filters.
Diff: 1
LO: 2-3
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

21) You have an extract of the payroll data for the last fiscal year. Payroll runs twice a month. The spreadsheet has the following columns: Pay Date, Employee, Department, and Payment Amount. How do you summarize the data as a pivot table to show the total payroll payments by department?
A) Set Department as dimensions and set Sum of Payment Amount as values.
B) Set Department as rows and set Payment Amount as columns.
C) Set Department as columns and set Sum of Payment Amount as measures.
D) Set Department as rows and set Sum of Payment Amount as values.
Answer: D
Explanation: Set Department as rows and set Sum of Payment Amount as values.
Diff: 2
LO: 2-3
Bloom: AP
Min.: 1
AACSB: Analytic
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22) You have an extract of the payroll data for the last fiscal year. Payroll runs twice a month. The spreadsheet has the following columns: Pay Date, Employee, Department, and Payment Amount. How would you determine the total payment for each employee in the first quarter for the year?
A) Set Department as rows, set Employee as columns, and set Sum of Payment Amount as values, and set Pay Date as filters.
B) Set Department as rows, set Pay Date as columns, set Sum of Payment Amount as values, and set Employee as filters.
C) Set Employee as rows, set Sum of Payment Amount as values, and set Pay Date as filters.
D) Set Employee as rows and set Sum of Payment Amount as values.
Answer: C
Explanation: Set Employee as rows, set Sum of Payment Amount as values, and set Pay Date as filters.
Diff: 2
LO: 2-3
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

23) You have an extract of the payroll data for the last fiscal year. Payroll runs twice a month. The spreadsheet has the following columns: Pay Date, Employee, Department, and Payment Amount. How would you determine the total number of employees by department?
A) Set Department as rows and set Count of Employee as values.
B) Set Employee as rows and set Department as columns.
C) Set Department as rows and set Count of Employee as columns.
D) Set Department as rows and set Sum of Employee as values.
Answer: A
Explanation: Set Department as rows and set Count of Employee as values.
Diff: 2
LO: 2-3
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

24) You have an extract of the sales data of the last three fiscal years. The extract is a spreadsheet with the following columns: Sales Date, Sales Order ID, Sales Amount, Product, and Sales Region. How would you determine the average sales transaction amount?
A) Set Sales Order ID as rows and set Average of Sales Amount as values.
B) Keep rows and columns as empty and set Average of Sales Amount as values.
C) Set Sales Order ID as columns and set Average of Sales Amount as values.
D) Set Sum of Sales Amount and Count of Sales Order ID as values.
Answer: B
Explanation: Keep rows and columns as empty and set Average of Sales Amount as values.
Diff: 2
LO: 2-3
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

25) You are analyzing employee salaries. If the salary values are spread-out evenly then
A) the mode and median should be similar.
B) the mean and median should be similar.
C) the mode and mean should be similar.
D) the mean and median should be very different.
Answer: B
Explanation: The mean and median should be similar.
Diff: 1
LO: 2-4
Bloom: K
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

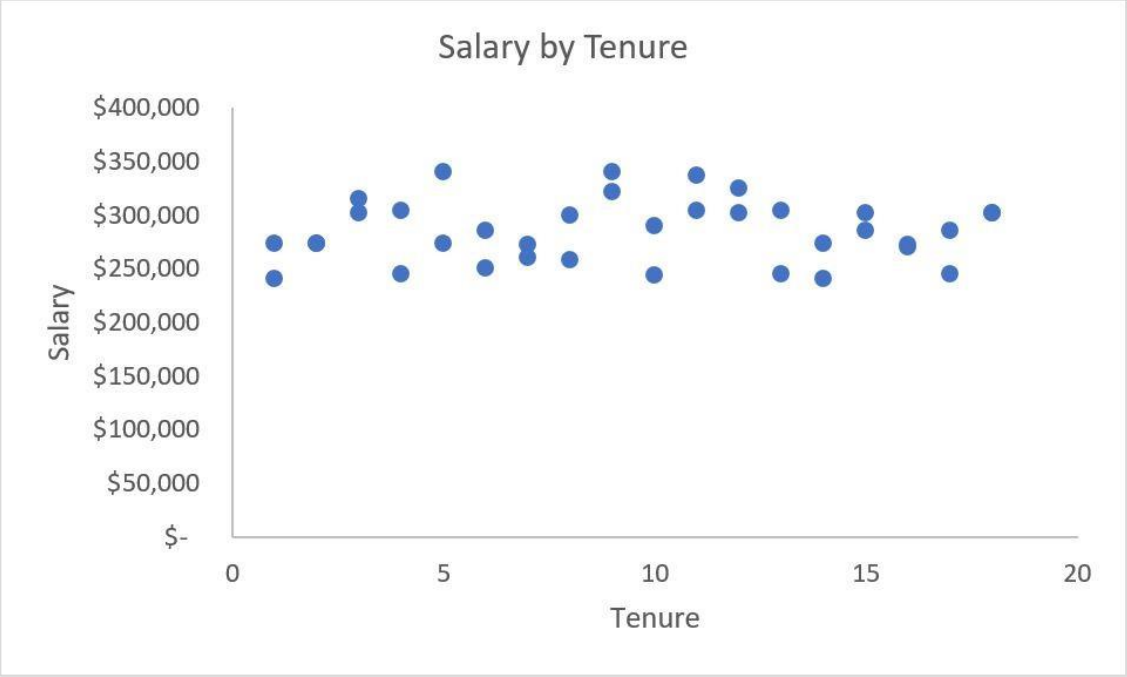
26) You are analyzing employee salaries. If the salary values are skewed such that there are a few employees with extremely high salaries,
A) the median is a better measure since the mean will be influenced by the few extremely high salaries.
B) the mean is a better measure since the median will be influenced by the few extremely high salaries.
C) the mode is a better measure since the median will be influenced by the few extremely high salaries.
D) the mode and the median will provide similar values.
Answer: A
Explanation: The median is a better measure if there are data outliers.
Diff: 2
LO: 2-4
Bloom: K
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

27) Variance and standard deviations are examples of
A) measures of location.
B) measures of dispersion.
C) measures of central tendency.
D) measures of shape.
Answer: B
Explanation: Variance and standard deviations are examples of measures of dispersion.
Diff: 1
LO: 2-4
Bloom: K
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

28) When analyzing accounts receivable values by customers, a high standard deviation
A) indicates that the values are spread out over a wide range.
B) indicates that the values are spread out over a small range.
C) indicates that the values are close to the mean.
D) indicates that the values are close to the median.
Answer: A
Explanation: A high standard deviation indicates that there is a high degree of dispersion, so values are spread out over a wide range.
Diff: 1
LO: 2-4
Bloom: K
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

29) When analyzing employee sales, you see that most of the salaries are close to the mean. This would imply that the
A) standard deviation is high.
B) standard deviation is low.
C) standard deviation could be high or low.
D) variance and standard deviations would be similar values.
Answer: B
Explanation: A low standard deviation indicates that there is a low degree of dispersion, so the values are close to the mean.
Diff: 1
LO: 2-4
Bloom: K
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

30) The following scatter chart was created to show the employee salaries by tenure.



With respect to salary values, the results of the scatter chart show that
A) there is a high standard deviation.
B) the mean and median values are similar.
C) the difference between the mean and median is large.
D) the variance and standard deviation will have similar values.
Answer: B
Explanation: Since the salary values appear to be relatively uniform, the mean and median values should be similar.
Diff: 2
LO: 2-4
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Measurement, Analysis, and Interpretation

31) When analyzing the values of the mean, median and mode, which statement is correct?
A) If there are outliers in the data, the mean tends to be a more reliable value.
B) If there are outliers in the data, the median tends to be a more reliable value.
C) If there are outliers in the data, the mode tends to be a more reliable value.
D) The mean is always more reliable than the median.
Answer: B
Explanation: The mean will be influenced if there are outliers in the data, so the median is a more reliable.
Diff: 1
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

32) In a symmetrical distribution, what conclusion can be made about the mean, median and mode?
A) The mean, median, and mode will have the same values.
B) Only the mean and mode will have the same values.
C) Only the mean and median will have the same values.
D) The mean, median, and mode will have different values.
Answer: A
Explanation: The mean, median, and mode will have the same value.
Diff: 1
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

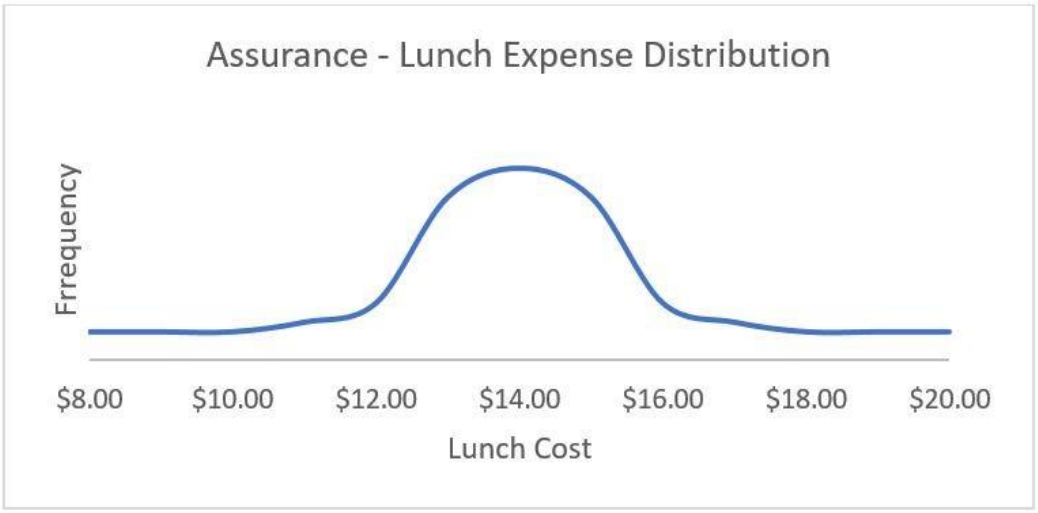
33) You are a financial analyst, and you are asked to show the salary distribution of employees. The distribution has been plotted out in the following graph:

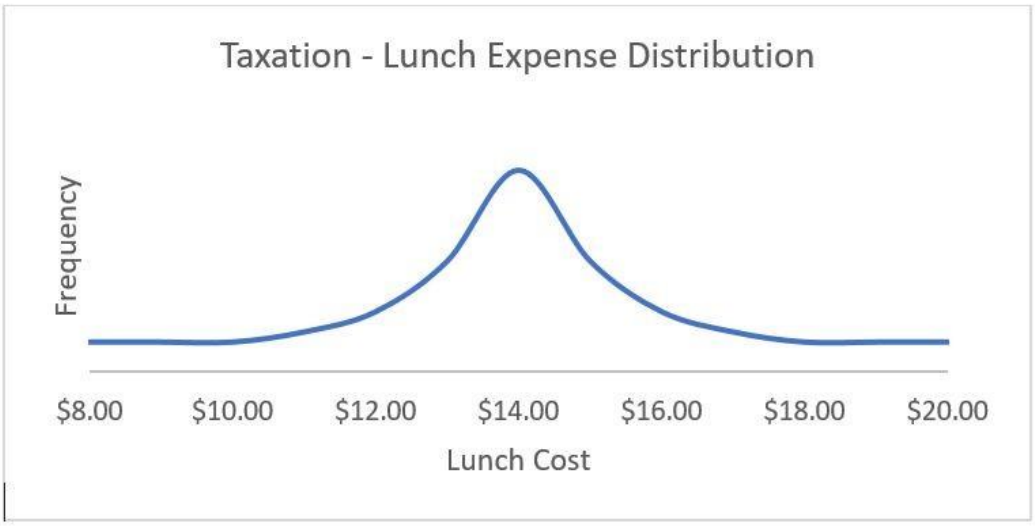
The distribution is showing that
A) the coefficient of skewness will be negative, and the mean will be lower than the median.
B) the coefficient of skewness will be negative, and the mean will be higher than the median.
C) the coefficient of skewness will be positive, and the mean will be lower than the median.
D) the coefficient of skewness will be positive, and the mean will be higher than the median.
Answer: A
Explanation: The distribution is showing a negative skew, which indicates that the mean will be lower than the median.
Diff: 2
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

34) You are a financial analyst, and you are asked to show the salary distribution of employees. The distribution has been plotted out in the following graph:

The distribution is showing that
A) the coefficient of skewness will be negative, and the mean will be lower than the median.
B) the coefficient of skewness will be negative, and the mean will be higher than the median.
C) the coefficient of skewness will be positive, and the mean will be lower than the median.
D) the coefficient of skewness will be positive, and the mean will be higher than the median.
Answer: D
Explanation: The distribution is showing a positive skew, which indicates that the mean will be higher than the median.
Diff: 2
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

35) At BTE Accounting Services, employee lunches are reimbursed during business travel. The lunch expense distribution is plotted for the Assurance and Taxation division.





The distribution is showing that
A) the coefficient of kurtosis will be higher for the Assurance division compared to the Taxation division.
B) the coefficient of kurtosis will be higher for the Taxation division compared to the Assurance division.
C) the coefficient of kurtosis for Taxation division and the Assurance division will be the same.
D) None of these answer choices are correct.

Answer: B
Explanation: Kurtosis refers to how peaked or flat a histogram of the data is. If there is more peak the coefficient of kurtosis will be higher.
Diff: 1
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

36) A coefficient of skewness of 0.6 means that
A) there is moderate skewness, and the data is right skewed.
B) there is a high degree of skewness, and the data is right skewed.
C) there is moderate skewness, and the data is left skewed.
D) there is a high degree of skewness, and the data is left skewed.
Answer: A
Explanation: Values of $0.5 \leq |CS| \geq 1$ indicate moderate skewness. If the CS is positive, the data is right skewed (tails off to the right).
Diff: 1
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

37) A coefficient of skewness of -2.3 means that
A) there is a high degree of skewness, and the data is left skewed.
B) there is a high degree of skewness, and the data is right skewed.
C) there is moderate skewness, and the data is right skewed.
D) there is moderate skewness, and the data is left skewed.
Answer: A
Explanation: Values of $|CS| > 1$ indicate a high degree of skewness. If the CS is negative, the data is left skewed (tails off to the left).
Diff: 1
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

38) A coefficient of kurtosis of 4.2 means that the
A) data is somewhat flat with a wide degree of dispersion.
B) data is somewhat peaked with less dispersion.
C) data has a high degree of skewness.
D) data has a moderate degree of skewness.
Answer: B
Explanation: If the CK is greater than three, the data is somewhat peaked with less dispersion.
Diff: 1
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

39) In a symmetrical distribution, the
A) coefficient of kurtosis will be greater than 3.
B) coefficient of skewness will be between 0.5 and 1.
C) coefficient of kurtosis can be useful for measuring dispersion.
D) coefficient of skewness will be greater than 1.
Answer: C
Explanation: In any distribution, the coefficient of kurtosis can be useful for measuring dispersion.
Diff: 2
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

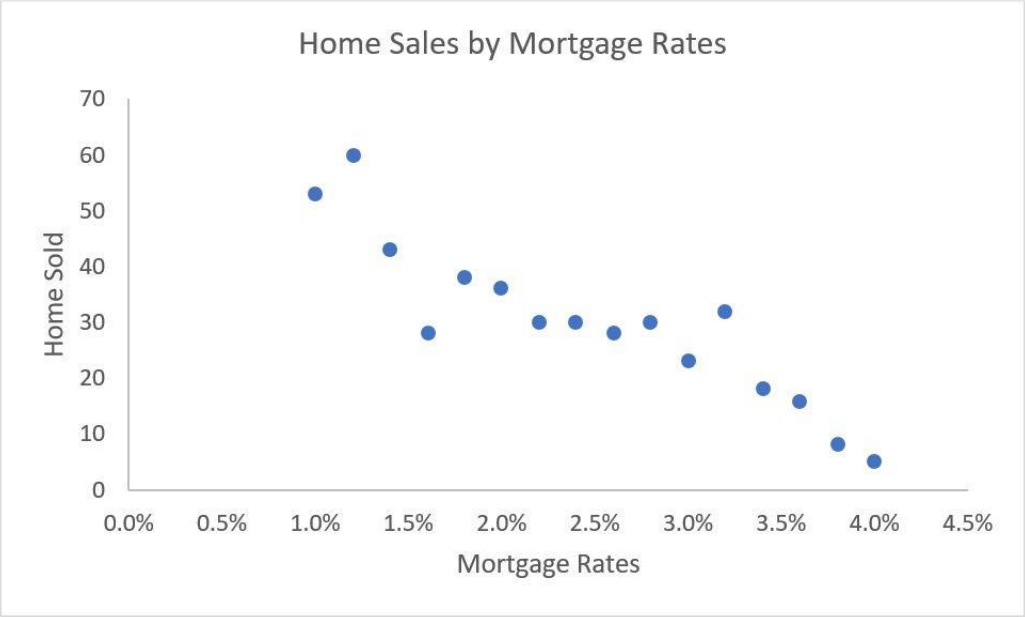
40) You are a financial analyst, and you are reviewing supplier performance for the procurement department. The suppliers' credit rating is part of the key performance indicators. A histogram chart showing distribution of supplier credit ratings is provided. What conclusions can be made?

A) The measure of location shows that the median is lower than the mean and the measure of shape shows that the coefficient of skewness is positive.
B) The measure of location shows that the median is higher than the mean and the measure of shape shows that the coefficient of skewness is negative.
C) The measure of location shows that the median is lower than the mean and the measure of shape shows that the coefficient of skewness is less than 0.5.
D) The measure of location shows that the median is higher than the mean and the measure of shape shows that the coefficient of skewness is greater than 1.
Answer: A
Explanation: The distribution is showing a positive skew, so the median is lower than the mean.
Diff: 2
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

41) You are a financial analyst, and you are reviewing supplier performance for the procurement department. The suppliers' credit rating is part of the key performance indicators. A histogram chart showing distribution of supplier credit ratings is provided. What conclusions can be made?

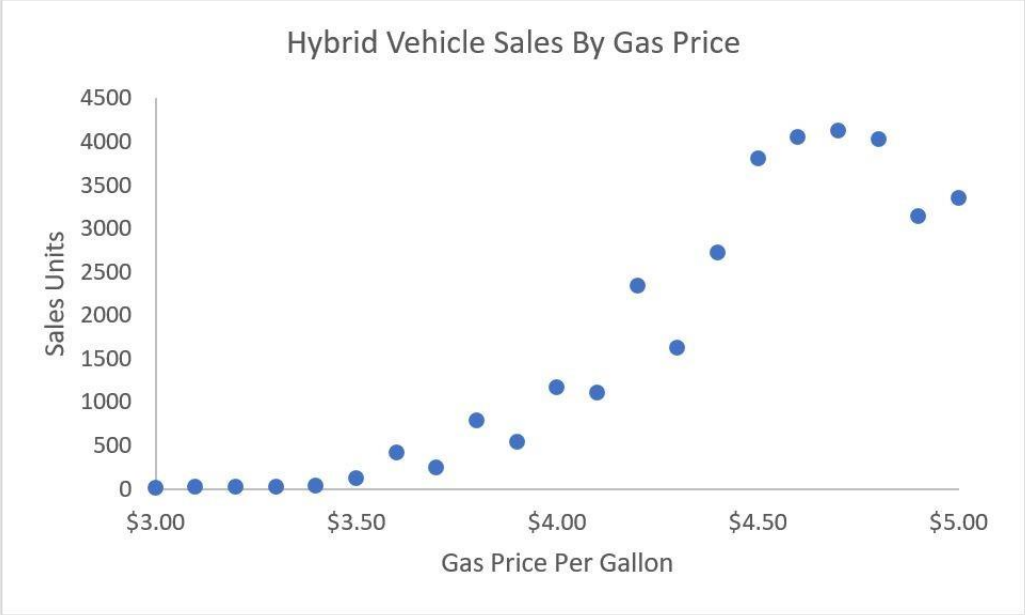
A) The bin range is in increments of 5.
B) The bin range is in increments of 10.
C) The coefficient of skewness is less than 1.
D) The coefficient of kurtosis is less than 1.
Answer: A
Explanation: The bin range is in increments of 5. For example, 60-64, 65-69, etc.
Diff: 1
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

42) Over the last 5 years, mortgage rates have been changing. You are a financial analyst at a real estate company, and you want to see the effect of mortgage rates and home sales. You create a scatter chart showing mortgage rates against the number of sales. What data relationship is being shown?



A) There is a strong positive linear relationship between mortgage rates and home sales.
B) There is no linear relationship between mortgage rates and home sales.
C) There is a perfect linear relationship between mortgage rates and home sales.
D) There is a strong negative linear relationship between mortgage rates and home sales.
Answer: D
Explanation: There is a strong negative linear relationship between mortgage rates and home sales. As mortgage rates increase, the number of home sales decrease.
Diff: 1
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

43) The price of gas impacted the sales of hybrid vehicles. The following scatter chart shows the price of gas against the sales units of hybrid vehicles. What data relationship is being shown?



A) There is a strong negative linear relationship between gas prices and hybrid vehicles.
B) There is a strong positive linear relationship between gas prices and hybrid vehicles.
C) There is no linear relationship between gas prices and hybrid vehicles.
D) There is a perfect linear relationship between gas prices and hybrid vehicles.
Answer: B
Explanation: There is a strong positive linear relationship between gas prices and hybrid vehicles. As gas prices increase, hybrid vehicles sales increase.
Diff: 1
LO: 2-4
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

44) Driving Comfort offers automotive insurance. A correlation analysis was completed to show the age of policy holders and their average claim. The correlation coefficient between the age of policy holders and their average claim is -0.78. What can be concluded?
A) There is a moderate negative linear relationship between the age of policy holders and their average claim.
B) There is a weak linear relationship between the age of policy holders and their average claim.
C) There is a strong negative linear relationship between the age of policy holders and their average claim.
D) There is no linear relationship between the age of policy holders and their average claim.
Answer: C
Explanation: A correlation coefficient between age of -0.78 indicates a strong negative linear relationship.
Diff: 1
LO: 2-4
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

45) Descriptive Statistics in Excel was used to analyze accounts payable values. The results are as follows:

Accounts Payable

Mean	880.9722222
Standard Error	160.9982672
Median	779
Mode	#N/A
Standard Deviation	965.9896032
Sample Variance	933,135.9135
Kurtosis	28.06306646
Skewness	4.991430883
Range	6,169
Minimum	34
Maximum	6,203
Sum	31,715
Count	36

The results are showing that
A) the average accounts payable is $881; the middle value of accounts payables is $779; and there is a wide dispersion of accounts payable values.
B) the average accounts payable is $881; the middle value of accounts payables is $779; and for any given account, the accounts payables value could be + or - $966 from $779.
C) the average accounts payable is $779; the middle value of accounts payables is $881; and for any given account, the accounts payables value could be + or - $966 from $779.
D) None of the answer choices are correct.
Answer: A
Explanation: The average is represented by mean. The middle value is represented by median. The standard deviation is high since it is greater than the mean, so there is a wide dispersion of accounts payable values.
Diff: 2
LO: 2-4
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

46) Descriptive Statistics in Excel was used to analyze outstanding accounts payable values. The results are as follows:

Accounts Payable	
Mean	880.9722222
Standard Error	160.9982672
Median	779
Mode	#N/A
Standard Deviation	965.9896032
Sample Variance	933,135.9135
Kurtosis	28.06306646
Skewness	4.991430883
Range	6,169
Minimum	34
Maximum	6,203
Sum	31,715
Count	36

The results are showing that
A) the shape of the accounts payable value distribution is peaked with less dispersion. The data peaks around the median and then tails off to the left.
B) the shape of the accounts payable value distribution is flat with a wide degree of dispersion. The data peaks around the mean and then tails off to the right.
C) the shape of the accounts payable value distribution is flat with a wide degree of dispersion. The data peaks around the mean and then tails off to the left.
D) the shape of the accounts payable value distribution is peaked with less dispersion. The data peaks around the mean and then tails off to the right.
Answer: D
Explanation: Since the coefficient of kurtosis is greater than 3, the data is somewhat peaked with less dispersion. Since the coefficient of skewness is positive, data peaks around the mean and then tails off to the right.
Diff: 2
LO: 2-4
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

47) Your company produces 25 different product categories. To compare the total value of sales for each product category, what data visualization would be the most appropriate to use?
A) Area charts
B) Line charts
C) Pie charts
D) Tree maps
Answer: D
Explanation: A and B require a date. C should have a max of five segments.
Diff: 1
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

48) Prime Pizza produces five different types of pizza. To show the monthly sales trends for each type of pizza over the year, what data visualization would be the most appropriate to use?
A) Bar charts
B) Bubble charts
C) Pie charts
D) Tree maps
Answer: A
Explanation: B, C and D do not show trends by date, so these are not appropriate.
Diff: 1
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

49) The marketing department of Jasmine Fashion House has asked you to compare sales according to the customer's age. The information will be used to target marketing campaigns to specific age groups. What data visualization would be the most appropriate to use?
A) Tree maps
B) Scatter charts
C) Area charts
D) Bubble charts
Answer: B
Explanation: Scatter charts show correlations between two or more data elements.
Diff: 1
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

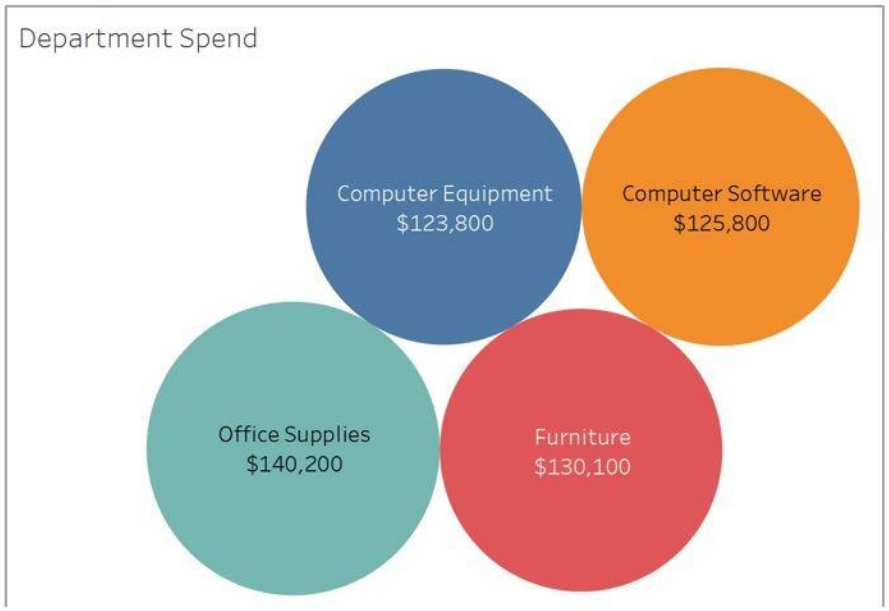
50) If the purpose of the analysis is to show data relationships, what is the best data visualization to use?
A) Area charts
B) Line charts
C) Column charts
D) Bubble charts
Answer: B
Explanation: Line charts with multiple lines shows correlation between data elements.
Diff: 1
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

51) What is a best practice for using pie charts?
A) Limit segments to a maximum of 5.
B) Limit segments to a maximum of 10.
C) Start the first segment at the 6 o'clock position.
D) Always show the percentage of each segment.
Answer: A
Explanation: Limit segments to a maximum of 5, otherwise, the segment size would be too hard to evaluate.
Diff: 1
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

52) What is a best practice for using line charts?
A) Do not plot more than 10 lines; instead, use multiple charts.
B) Start the y-axis at zero or above.
C) Use solid lines or dotted lines.
D) Do not plot more than four lines.
Answer: D
Explanation: Do not plot more than four lines.
Diff: 1
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

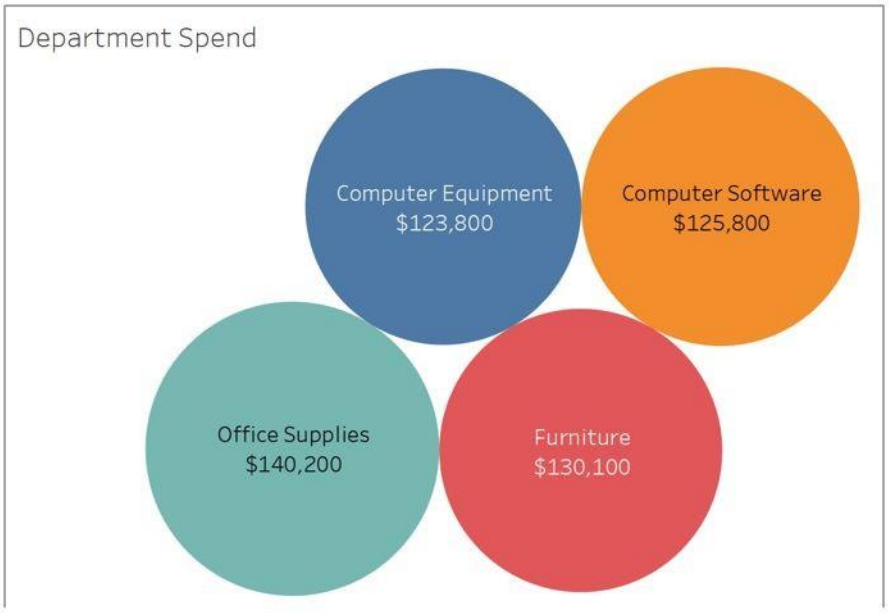
53) What is a best practice for using histogram charts?
A) Use a zero baseline.
B) The bins should represent time intervals.
C) There should be a max of 10 bins.
D) There should be a minimum of 3 bins.
Answer: A
Explanation: Use a zero baseline. Otherwise, the data may appear skewed.
Diff: 1
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

54) You are asked to review the following data visualization that shows your department expenses by category.



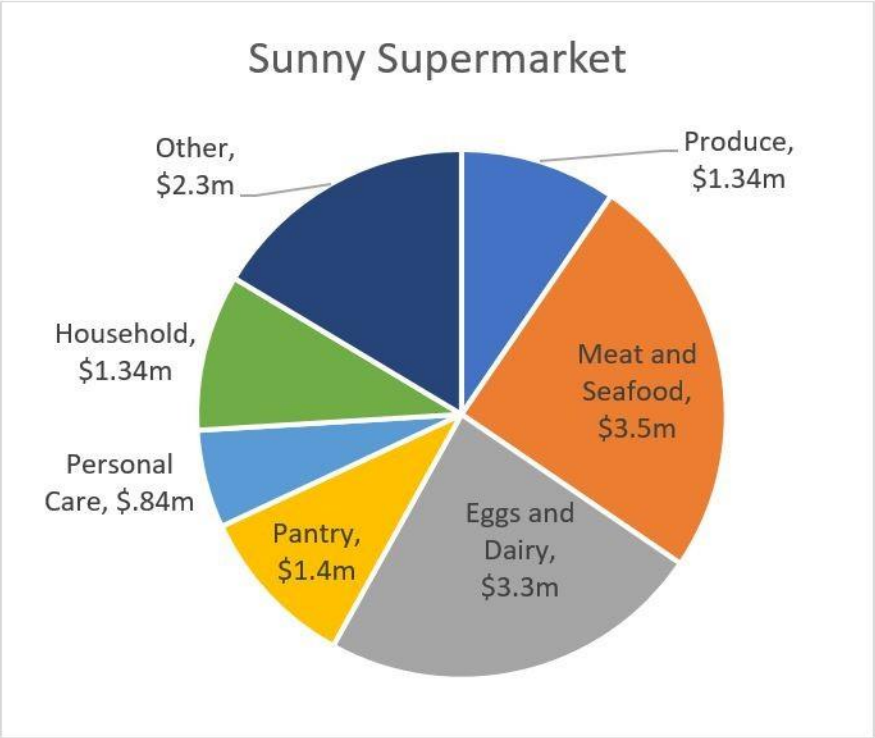
What is your feedback?
A) There should be better color contrast between bubbles.
B) A bubble chart is not an effective visualization when the value of the categories is similar.
C) The percentage of the total spend should be shown within each bubble.
D) The bubble chart is appropriate, and no changes are needed.
Answer: B
Explanation: Do not use a bubble chart if they are all similar in size.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

55) You are asked to review the following data visualization that shows your department expenses by category.



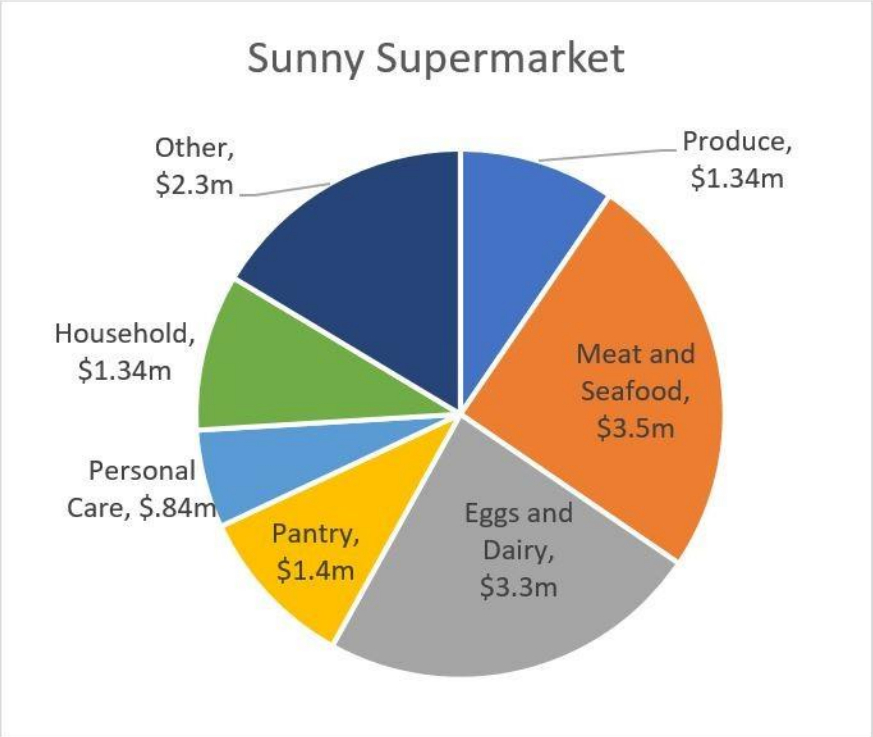
What is your recommendation?
A) Convert the bubble chart to a bar chart so that the size of the column can be easily compared.
B) Convert the bubble chart to a tree map so that the size of the squares can be easily compared.
C) Convert the bubble chart to an area chart so that the size of the areas can be easily compared.
D) There are no improvements needed.
Answer: A
Explanation: A bar chart compares values by column length for each category.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

56) You are asked to review the following data visualization that shows revenue by category for Sunny Supermarket.



What is your feedback?
A) A pie chart is not an appropriate visualization to use since there are too many segments to show.
B) The percentage of total revenue for each product category should always be displayed.
C) The product category should be ordered from the highest revenue to the lowest revenue starting from the 12 o'clock position.
D) The product category should be ordered alphabetically starting from the 12 o'clock position.
Answer: A
Explanation: A pie chart should have a max of 5 segments.
Diff: 1
LO: 2-5
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

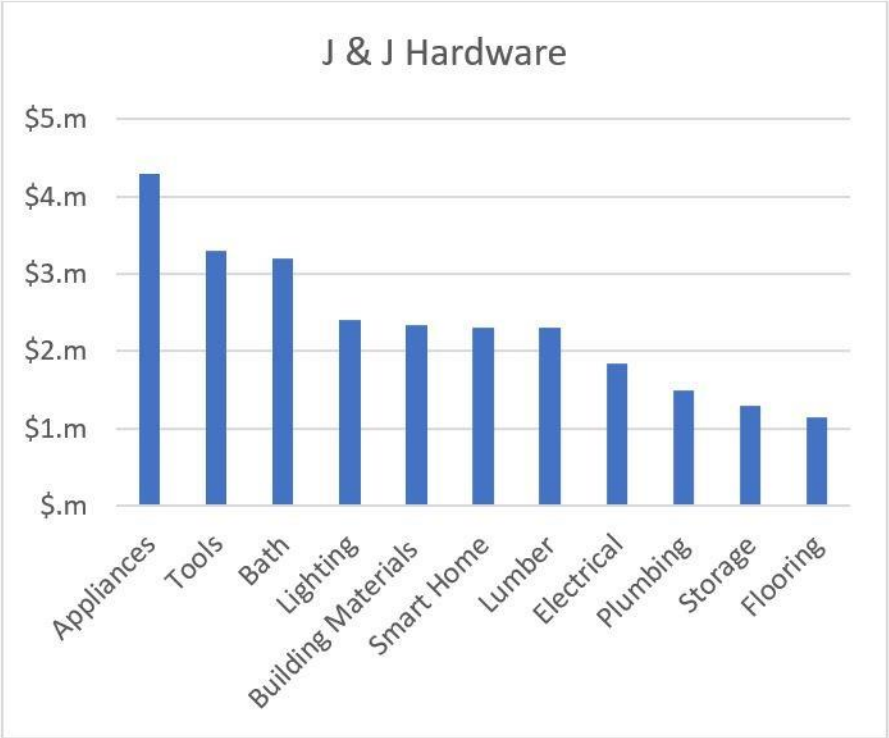
57) You are asked to review the following data visualization that shows revenue by category for Sunny Supermarket.



What is your recommendation?
A) Convert the pie chart to a bar chart since there are too many segments.
B) Convert the pie chart to a stacked column chart so that the total revenue can also be shown.
C) Adjust the pie chart by consolidating some categories together.
D) Convert the pie chart to an area chart since the size of the areas can be easily compared.
Answer: A
Explanation: A bar chart compares values for each category.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

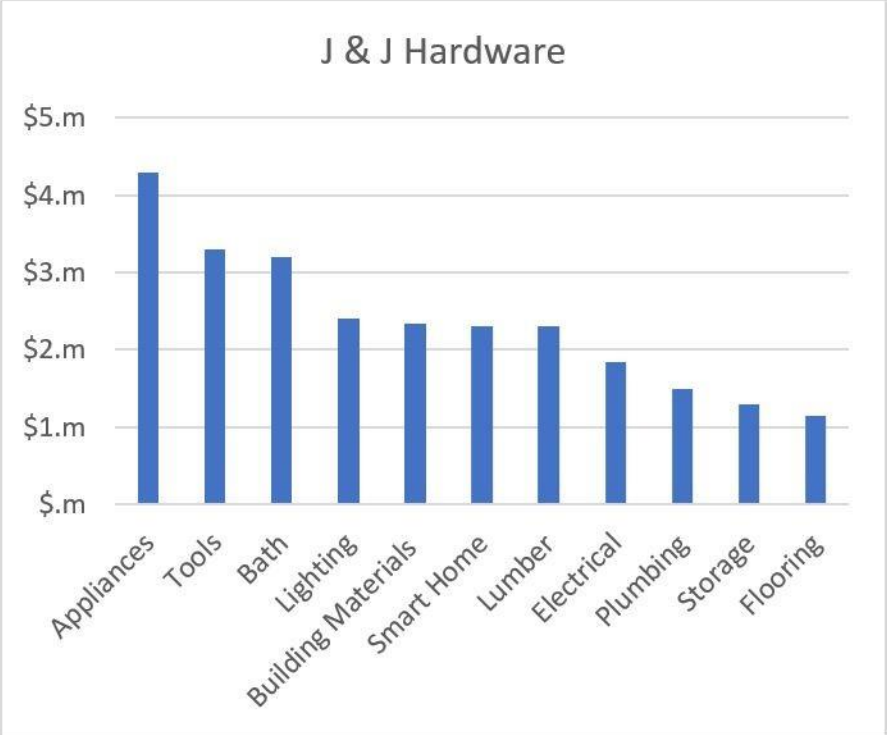
58) The best data visualization to show data trends would be
A) a pie chart.
B) a line chart.
C) a tree map.
D) a bubble chart.
Answer: B
Explanation: A, C and D don't support a time series.
Diff: 1
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

59) You are asked to review the following data visualization that shows revenue by categories for J & J Hardware.



What is your feedback?
A) The categories should be ordered alphabetically so that the categories can be easily found.
B) A vertical bar chart is not appropriate to use since there are too many categories shown.
C) The categories should be coded in different colors for better readability.
D) The total revenue value for each category should be shown at the top of each bar.
Answer: B
Explanation: Vertical bars should have a max of seven categories.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

60) You are asked to review the following data visualization that shows revenue by categories for J & J Hardware.



What is your recommendation?
A) The vertical bar chart should be changed to a pie chart.
B) The vertical bar chart should be changed to a tree map.
C) The vertical bar chart should be changed to a horizontal bar chart.
D) The vertical bar chart should be changed to a line chart.
Answer: C
Explanation: A horizontal bar chart should be used since horizontal labels offers better readability.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

61) A best practice for bar charts is
A) always use a zero baseline.
B) use vertical bars if there are less than 10 categories.
C) use horizontal bars if there are more than 10 categories.
D) color coding bars for each category.
Answer: A
Explanation: Always use a zero baseline so that the data doesn't look skewed.
Diff: 1
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

62) Hammond Chairs manufactures office chairs. To analyze manufacturing data, a scatter chart was used to plot the total cost of materials against the total units produced for each batch of production. This is an example of
A) exploratory data visualization to identify patterns, trends, or anomalies.
B) exploratory data visualization to show relationships in the data and communicate insights.
C) explanatory data visualization to identify patterns, trends, or anomalies to show relationships in the data, and communicate insights.
D) explanatory data visualization to show relationships in the data and communicate insights.
Answer: A
Explanation: Exploratory data visualization is used to identify patterns, trends, or anomalies.
Diff: 2
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

63) Field House Social is a national chain of restaurants. You want to identify which restaurants generate the most revenue based on the number of employees at each restaurant. What is the purpose of the analysis and the data visualization that should be used?
A) The purpose of the analysis is to show data relationships, and a line chart is an appropriate data visualization to use.
B) The purpose of the analysis is to show data distributions, and a scatter chart is an appropriate data visualization to use.
C) The purpose of the analysis is to show data relationships, and a scatter chart is an appropriate data visualization to use.
D) The purpose of the analysis is to show data distributions, and a bar chart is an appropriate data visualization to use.
Answer: C
Explanation: The data relationship between revenue and the number of employees at each restaurant location can be shown through a scatter chart.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

64) Lighting Technologies is a public traded company. You want to compare Lighting stock prices against the stock prices of your top five competitors. What is the purpose of the analysis and the data visualization that should be used?
A) The purpose of the analysis is to show trends, and a scatter chart is an appropriate data visualization to use.
B) The purpose of the analysis is to show trends, and a column chart is an appropriate data visualization to use.
C) The purpose of the analysis is to show comparisons, and a line chart is an appropriate data visualization to use.
D) The purpose of the analysis is to show comparisons, and an area chart is an appropriate data visualization to use.
Answer: C
Explanation: The purpose of the analysis is to show comparisons between stock prices. A line chart is an appropriate data visualization to use since it allows a time series to be shown.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

65) Jarvis Publishing is a publisher of educational materials. Sales throughout the year can be seasonal. A data visualization is being created to show sales throughout the year. What is the purpose of the analysis and the data visualization that should be used?
A) The purpose of the analysis is to show distributions, and a column chart is an appropriate data visualization to use.
B) The purpose of the analysis is to show comparisons, and a scatter chart is an appropriate data visualization to use.
C) The purpose of the analysis is to show trends, and a scatter chart is an appropriate data visualization to use.
D) The purpose of the analysis is to show trends, and a line chart is an appropriate data visualization to use.
Answer: D
Explanation: The purpose of the analysis is to show trends throughout the year. A line chart is an appropriate data visualization to use since it allows a time series to be shown.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

66) If the purpose of the analysis is to show composition,
A) area charts, pie charts and scatter charts can be used.
B) pie charts, histogram charts, and scatter charts can be used.
C) histogram charts, scatter charts, and stacked bar charts can be used.
D) area charts, pie charts, and stacked bar charts can be used.
Answer: D
Explanation: Scatter charts show relationship and histogram chart shows distribution, so these don't show composition.
Diff: 2
LO: 2-5
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

67) Consider the following Excel worksheet for customer accounts:

	A	B	C
1	**Customer ID**	**Outstanding Balance**	**Status**
2	203211	$104,100	High Risk
3	203212	$99,900	Low Risk
4	203213	$76,000	Low Risk
5	203214	$99,900	
…	…	…	…

Column C indicates if the Customer is "High Risk" or "Low Risk". What would be the formula for C5 given the results of other values in the Status column?
A) IF(B5>100000, "High Risk", "Low Risk")
B) IFS(B5>100000, "High Risk", "Low Risk")
C) IF(B5<100000, "High Risk", "Low Risk")
D) IFS(B5>100000, "Low Risk", "High Risk")
Answer: A
Explanation: B and D would result in an error in the formula. C would show that $99,900 is "High Risk" which is incorrect.
Diff: 2
LO: 2-2
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

68) Eagle Wings Motors is an automobile manufacturer. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the sales order table:

	A	B	C	D	E	F
1	**SalesID**	**Product**	**Location**	**SalesDate**	**Qty**	**UnitPrice**
2	203211	Premium	NY	2021-02-02	20	$45,100
3	203212	Economy	CA	2022-01-07	40	$25,200
4	203213	Luxury	FL	2022-03-14	13	$76,000
5	203214	Luxury	CA	2022-03-16	15	$76,900
…	…	…	…	…	…	…
2029	205304	Economy	MA	2022-11-16	33	$23,100
2030	205303	Premium	LA	2022-12-17	40	$42,700

Line 2030 is the last sales record in the file. What are the Excel formulas that will calculate the number of rows that have the Location field as blank? Select all that apply.
A) =COUNTIF(C2:C2030, "")
B) =COUNTBLANK(C2:C2030)
C) =COUNTIFS(C2:C2030, "")
D) =COUNTA(C2:C2030)
Answer: A, B, C
Explanation: D will count the number of cells containing text.
Diff: 3
LO: 2-2
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

69) AutoFood is a food delivery service. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the total sales for each customer:

	A	B	C	D	E	F	G
1	**CustID**	**First**	**Last**	**Phone**	**Email**	**Region**	**Sales**
2	3002	Shawn	Ng	503-345-1405	s.ng1@mail.com	Central	$234.13
3	3003	Penny	Singh	503-365-2434		South	$1273.11
4	3004	Daisy	Roberts		drob2@mail.com	East	
5	3005	William	Martin	503-645-6434	Wm2@mail.com	West	$2234.43
…	…	…	…	…	…	…	
670	3670	Ethel	Parson	503-755-7405	epars@gmail.com	North	$254.17
671	3671	Denise	Bishop	503-905-9415	dbisho@msn.com	Central	$8233.34

Line 671 is the last record in the spreadsheet. What are the Excel formulas that will calculate the total sales within the Central and East regions? Select all that apply.
A) =SUMIF(G2:G671, F2:F671, "Central", F2:F671, "East")
B) =SUMIF(F2:F671, "Central", G2:G671) + SUMIF(F2:F671, "East", G2:G671)
C) =SUMIFS(G2:G671, F2:F671, "Central", F2:F671,"East")
D) =SUMIFS(G2:G671, F2:F671, "Central") + SUMIFS(G2:G671, F2:F671, "East")
Answer: B, D
Explanation: C will result in 0. A will result in an error in the formula.
C will result in 0. A will result in an error in the formula.
Diff: 3
LO: 2-2
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

70) AutoFood is a food delivery service. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the total sales for each customer:

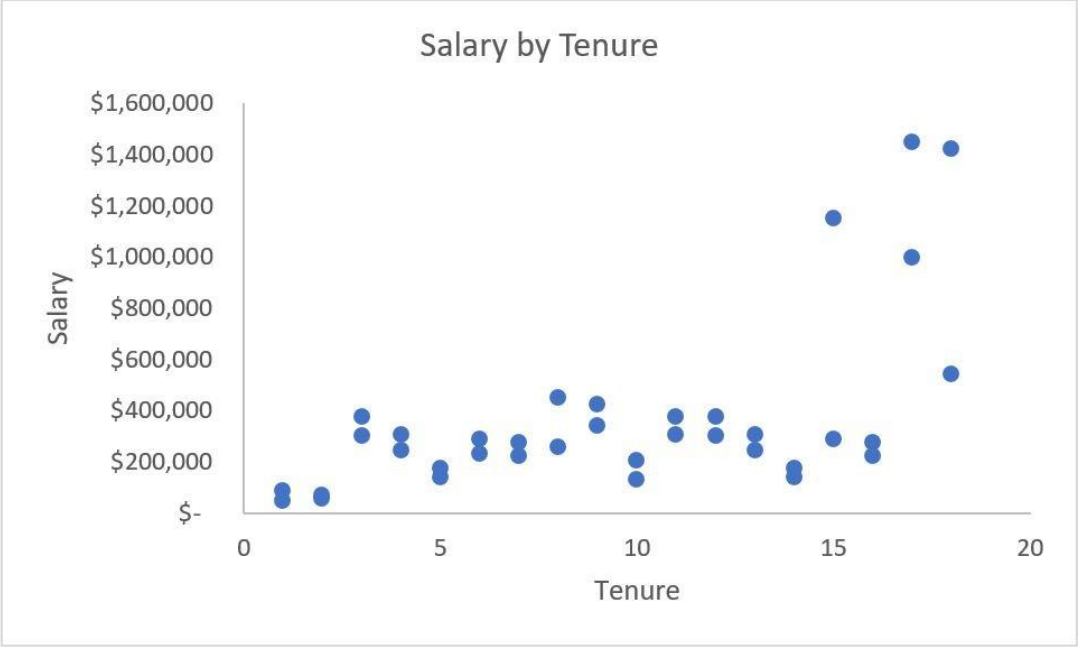
	A	B	C	D	E	F	G
1	**CustID**	**First**	**Last**	**Phone**	**Email**	**Region**	**Sales**
2	3002	Shawn	Ng	503-345-1405	s.ng1@mail.com	Central	$234.13
3	3003	Penny	Singh	503-365-2434		South	$1273.11
4	3004	Daisy	Roberts		drob2@mail.com	East	
5	3005	William	Martin	503-645-6434	Wm2@mail.com	West	$2234.43
…	…	…	…	…	…	…	
670	3670	Ethel	Parson	503-755-7405	epars@gmail.com	North	$254.17
671	3671	Denise	Bishop	503-905-9415	dbisho@msn.com	Central	$8233.34

Line 671 is the last record in the spreadsheet. What are the Excel formulas that calculate the number of customers who don't have any sales? Select all that apply.
A) =COUNT(G2:G671, "")
B) =COUNTIF(G2:G671,"")
C) =COUNTBLANKS(G2:G671)
D) =COUNTIFS(G2:G671, "")
Answer: B, C, D
Explanation: A will count all lines between G2 and G671.
Diff: 3
LO: 2-2
Bloom: C
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

71) You have an extract of the sales data from the last three fiscal years. The extract is a spreadsheet with the following columns: Sales Date, Sales Order ID, Sales Amount, Product, and Sales Region. How would you determine the total sales by sales region for the last fiscal year? Select all that apply.
A) Set Sales Region as rows, set Sum of Sales Amount as values, and set Sales Date as Filters.
B) Set Sales Region as rows, set Sales Date as Columns, and set Sales Amount as Filters.
C) Set Sales Region as rows, set Sales Date as Columns, and use Sales Amount as Slicers.
D) Set Sales Region as rows, set Sum of Sales Amount as values, and use Sales Date as Slicers.
Answer: A, D
Explanation: B and C doesn't sum the Sales Amounts.
Diff: 3
LO: 2-3
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

72) You have an extract of the sales data from the last three fiscal years. The extract is a spreadsheet with the following columns: Sales Date, Sales Order ID, Sales Amount, Product, and Sales Region. How would you determine the top 10 sales regions that have the highest total sales? Select all that apply.
A) Set Sales Region as rows, set Sum of Sales Amount as values, and in the Sum of Sales Amount column, apply a filter for the top 10 by Sum of Sales Amount.
B) Set Sales Region as rows, set Sum of Sales Amount as values, and in the Sales Region column, apply a filter for the top 10 by Sum of Sales Amount.
C) Set Sales Region as rows, set Sum of Sales Amount as values, and sort by the Sum of Sales Amount column and observe the top 10 Sales Regions
D) Set Sales Region as rows, set Sum of Sales Amount as values, and in the Sum of Sales Amount column, apply a filter for the top 10 by Sales Region.
Answer: B, C
Explanation: A and D does not support filters on the Sum by Sales Amount column.
Diff: 3
LO: 2-3
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

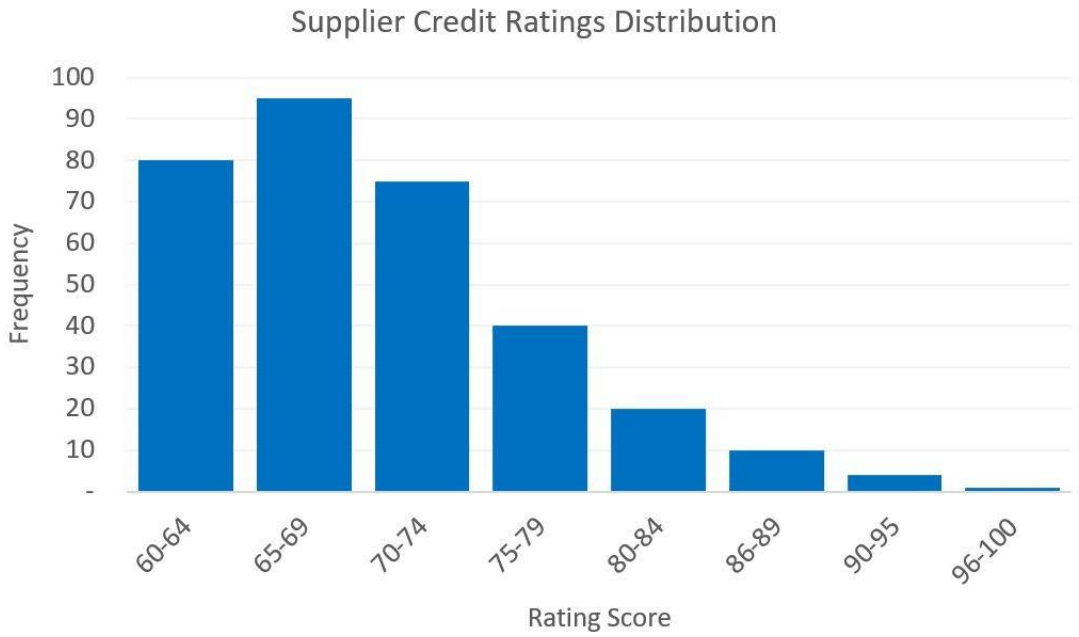
73) The following scatter chart was created to show employee salaries by tenure.



Select all that apply. With respect to salary values, the results of the scatter chart show that
A) the standard deviation is low.
B) the standard deviation is high.
C) the mean and median have similar values.
D) the mean is higher than the median.
Answer: B, D
Explanation: The standard deviation is high since the values are spread over a large range. The mean is higher than the median since there are some outliers that are pushing the mean to be high.
Diff: 2
LO: 2-4
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

74) Select all that apply. When measuring the shape of the data distribution,
A) a negative skew refers to a longer tail on the left side of the distribution.
B) a positive skew refers to a longer tail on the right side of the distribution.
C) a negative skew refers to a longer tail on the right side of the distribution.
D) a positive skew refers to a longer tail on the left side of the distribution.
Answer: A, B
Explanation: A negative skew refers to a longer tail on the left side of the distribution, and a positive skew refers to a longer tail on the right side of the distribution.
Diff: 1
LO: 2-4
Bloom: K
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

75) You are a financial analyst, and you are reviewing supplier performance for the procurement department. The suppliers' credit rating is part of the key performance indicators. A histogram chart showing distribution of supplier credit ratings is provided. What conclusions can be made? Select all that apply.



A) The bin range is in increments of 5.
B) The bin range is in increments of 4.
C) The coefficient of skewness is positive.
D) The coefficient of kurtosis is less than 1.
Answer: A, C
Explanation: The bin range is in increments of 5. For example, 60-64, 65-69, etc. Since there is a positive skew, the coefficient of skewness is positive.
Diff: 2
LO: 2-4
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

76) Broadway Luxury Motors sells luxury cars. What would be an expected data correlation? Select all that apply.
A) Annual rainfall values will have a negative correlation with luxury convertible vehicles sales.
B) Annual rainfall values will have a positive correlation with luxury convertible vehicles sales.
C) Average temperature values will have a negative correlation with luxury convertible vehicles sales.
D) Average temperature values will have a positive correlation with luxury convertible vehicles sales.
Answer: A, D
Explanation: High annual rainfall values will weaken convertible sales. Warmer temperatures would strengthen convertible sales.
Diff: 2
LO: 2-4
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

77) You have grouped accounts receivables into aging buckets. The buckets are 0 to 30 days, 31 to 60 days, 61 to 90 days and greater than 90 days. To show accounts receivables distributions in these buckets, what data visualizations would be the most appropriate to use? Select all that apply.
A) Histogram charts
B) Line charts
C) Scatter charts
D) Bubble charts
Answer: A, B
Explanation: A histogram and a line chart are effective visualizations to show distributions.
A histogram and a line chart are effective visualizations to show distributions.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

78) Closets Plus is a manufacturer of several closet products. All the parts that are used to build the closets are stored in the BillofMaterials table. The InventoryData table tracks all parts available in inventory.

BillofMaterials
ProductNumber
ItemNumber
PartNumber
Quantity

InventoryData
PartNumber
QuantityOnHand
StorageLocation

BillofMaterials is the left table and InventoryData is the right table. A left join between BillofMaterials and InventoryData can be used to answer the following questions. Select all that apply.
A) Which products have missing part numbers in inventory?
B) How many products can be made given the available part numbers in inventory?
C) Are there any part numbers in inventory that are not part of a product?
D) How many additional parts need to be ordered to fulfill a customer order?
Answer: A, B, D
Explanation: C would require a right join.
Diff: 3
LO: 2-1
Bloom: AP
Min.: 1
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

79) What is the difference between exploratory data visualization and explanatory data visualization? Provide an accounting example for each type of data visualization.
Answer: Exploratory data visualization is used to examine data to uncover patterns, trends, or anomalies, whereas explanatory data visualization is used to explain the results of an analysis, show relationships in the data, and communicate insights. Exploratory data visualization can be used to look at employee expense to detect any anomalies for possible fraud. Explanatory data visualization can be used to show sales trends to see if there any seasonality in sales throughout the year.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 5
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

80) Business travel presents a large portion of expenses for Global Reach Consulting. ProjectMaster (left table) lists all projects and their budget. ExpenseData (right table) tracks employee expenses for each project.

ProjectMaster
ProjectID
ProjectName
TotalBudget
TeamMemberCount

ExpenseData
ProjectID
EmployeeID
ExpenseDescription
Amount
TransactionDate

What questions can be answered using the following join types?
• a left join
• a right join
• an inner join
Answer: Left join: What is the total expense for all projects?
Right join: What expense transactions don't have any matching projects?
Inner join: What projects have expenses associated to it?
Diff: 2
LO: 2-1
Bloom: AP
Min.: 5
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

81) Business travel presents a large portion of expenses for Global Reach Consulting. ProjectMaster (left table) lists all projects and their budget. ExpenseData (right table) tracks employee expenses for each project.

ProjectMaster
ProjectID
ProjectName
TotalBudget
TeamMemberCount

ExpenseData
ExpenseID
ProjectID
EmployeeID
ExpenseDescription
Amount
TransactionDate

What is meant by a primary key? What are the primary keys for each of these tables? What is meant by a foreign key? What are the foreign keys for each of these tables?
Answer: The primary key is the column which must have a unique value for each row in the table. The ProjectID is the primary key for ProjectMaster and ExpenseID is the primary key to ExpenseData. The foreign key contains the same data as a primary key from another table. It is repeated in this table so the tables can be linked in relationship to each other. There are no foreign keys in the ProjectMaster table. ProjectID and EmployeeID are foreign keys in the ExpenseData table.
Diff: 2
LO: 2-1
Bloom: AP
Min.: 5
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

82) What is the difference between coefficient of skewness and coefficient of kurtosis? What can be interpreted if the coefficient of skewness is greater than 1? What can be interpreted if the coefficient of kurtosis is greater than 3?
Answer: The coefficient of skewness measures the skewness of a distribution whereas the coefficient of kurtosis determines how peaked or flat a histogram of the data is. If the coefficient of skewness is greater than 1, there is a high degree of skewness. If the coefficient of kurtosis is greater than 3, the data is somewhat peaked with less dispersion.
Diff: 1
LO: 2-4
Bloom: K
Min.: 5
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

83) Eagle Wings Motors is an automobile manufacturer. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the sales order table:

	A	B	C	D	E	F
1	**SalesID**	**Product**	**Location**	**SalesDate**	**Qty**	**UnitPrice**
2	203211	Premium	NY	2021-02-02	20	$45,100
3	203212	Economy	CA	2022-01-07	40	$25,200
4	203213	Luxury	FL	2022-03-14	13	$76,000
5	203214	Luxury	CA	2022-03-16	15	$76,900
…	…	…	…	…	…	…
2029	205304	Economy	MA	2022-11-16	33	$23,100
2030	205303	Premium	LA	2022-12-17	40	$42,700

What are the four components of a pivot table? How do you summarize the data as a pivot table to determine the count of sales transaction for each product within each location in 2022? What data elements would be represented for each component in the pivot table?
Answer: The four components to a pivot table are columns, rows, values, and filters. The columns would be Location, the rows would be Product, the values would be Count of Sales ID, and the filters would be the Sales Dates in 2022. Alternatively, the columns would be Product, the rows would be Location, the value would be Count of Sales ID, and the filters would be the Sales Dates in 2022.
Diff: 2
LO: 2-3
Bloom: AP
Min.: 5
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

84) Eagle Wings Motors is an automobile manufacturer. The sales order data has been extracted from their ERP system and exported into an Excel table. Consider the following Excel worksheet of the sales order table:

	A	B	C	D	E
1	**SalesID**	**Product**	**Location**	**SalesDate**	**Total Sales**
2	203211	Premium	NY	2021-02-02	$451,100
3	203212	Economy	CA	2022-01-07	$253,200
4	203213	Luxury	FL	2022-03-14	$363,000
5	203214	Luxury	CA	2022-03-16	$732,800
…	…	…	…	…	…
2029	205304	Economy	MA	2022-11-16	$233,400
2030	205303	Premium	LA	2022-12-17	$143,700

Discuss two approaches within Excel that can be used to calculate the total sales of luxury cars in the state of Louisiana.
Answer:
1. Create a pivot table with the column and row being blank, set the value as Sum of Total Sales, and set filters for Location to be "LA" and Product to be "Luxury"
2. Create an Excel formula to be =SUMIFS(E2:E2030, C2:C2030, "LA", B2:B2030, "Luxury")
Diff: 2
LO: 2-2, 2-3
Bloom: AP
Min.: 5
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

85) Define measure of central tendency. You are given a data set of the following numbers: 2, 3, 3, 3, 3, 4, 5, 6, 8, and 8. What are the three measures of central tendency. Using the values in the data set, what are the values of the three measures?
Answer: A measure of central tendency is a single value that describes a set of data by identifying the central position within that data set. There are three measures of central tendency: mean, median and mode. The mean is 4.5, the mode is 3 and the median is 3.5.
Diff: 1
LO: 2-4
Bloom: AP
Min.: 5
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

86) What is the difference between variance and standard deviation? Compare the usefulness for interpreting dispersion.
Answer: Variance is the average squared distance between the data points in the data set and the mean, whereas the standard deviation is the square root of the variance. Although variance is necessary to calculate standard deviation, standard deviation is a more useful measure. The standard deviation is in the same units as the mean, so it is easier to interpret and understand compared to variance.
Diff: 2
LO: 2-4
Bloom: C
Min.: 5
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

87) Define Pearson Product Moment Correlation Coefficient. Explain the meaning behind the values for Pearson Product Moment Correlation Coefficient.
Answer: Pearson Product Moment Correlation Coefficient measures the linear relationship between two variables. This measure is a numerical value between -1 and +1. If the value is close to +1, there is positive correlation which means that if one variable increases the other variable will increase as well. If the value is close to -1, there is negative correlation which means that if one variable increases the other variable will increase as well.
Diff: 2
LO: 2-4
Bloom: C
Min.: 5
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

88) You are a financial analyst for Pizza 511. You are given the following tables from the ERP system.

MenuItems
ProductID
ProductDescription
Price

SalesOrder
SalesOrderID
ProductID
Quantity
CustomerID
TransactionDate

Customer
CustomerID
CustomerName
Street
City
State
Phone

1. What are the primary keys for each of the tables?
2. What are the foreign keys for each of the tables?
3. What table joins would be used to determine the monthly sales total for all customers who placed an order. Indicate the type of join used.
4. What table joins would be used to determine if there are sales orders for products that are not in the MenuItems table? Indicate the type of join used.
5. What table joins would be used to determine the value of total sales. Indicate the type of join used.

Answer:
1. MenuItems: ProductID
SalesOrder: The combination of SalesOrderID and ProductID.
Customer: CustomerID
2. MenuItems: None
SalesOrder: ProductID, CustomerID
Customer: None
3. SalesOrder inner join with Customer.
4. SalesOrder right join MenuItems.
5. SalesOrder inner join MenuItems.
Diff: 2
LO: 2-1
Bloom: AP
Min.: 10
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

89) You are a financial analyst for Trillium Properties. A new rental housing construction project has been completed. The following data set was provided showing labor cost and materials cost by fiscal quarters.

Period	Labor Cost $	Materials Cost $
Year 1 Q1	155,340	58,489
Year 1 Q2	174,463	59,418
Year 1 Q3	180,489	118,949
Year 1 Q4	183,213	127,255
Year 2 Q1	199,454	249,510
Year 2 Q2	189,905	324,991
Year 2 Q3	237,363	351,903
Year 2 Q4	228,720	332,563
Year 3 Q1	215,349	361,997
Year 3 Q2	191,311	186,534
Year 3 Q3	178,447	77,093
Year 3 Q4	140,073	29,170

1. Identify an appropriate visualization to show the total cost of construction by period. The breakdown between labor cost and materials cost should also be shown in the same visualization. Explain your reasoning on why you chose this visualization. How would the data elements be shown on the visualization?
2. List three best practices for the visualization.
Answer:
1. A stacked bar chart should be used since the visualization allows you to show the total cost over a time series. Since the labor cost and materials cost would be stacked, you can use the cost breakdown for each period. The y-axis should show the costs and x-axis should show the period.
2.
• Use horizontal labels for better readability.
• Space bars appropriately and consistently.
• Use color sparingly or as an accent color.
• Always have a zero baseline.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 10
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

90) Holland Hospital is reviewing the depreciation policy of its medical equipment. They are currently using a straight-line depreciation approach. They are interested in how the yearly depreciation expense will be impacted if they change the policy to the declining balance depreciation or to the sum-of-the-years' digits depreciation.

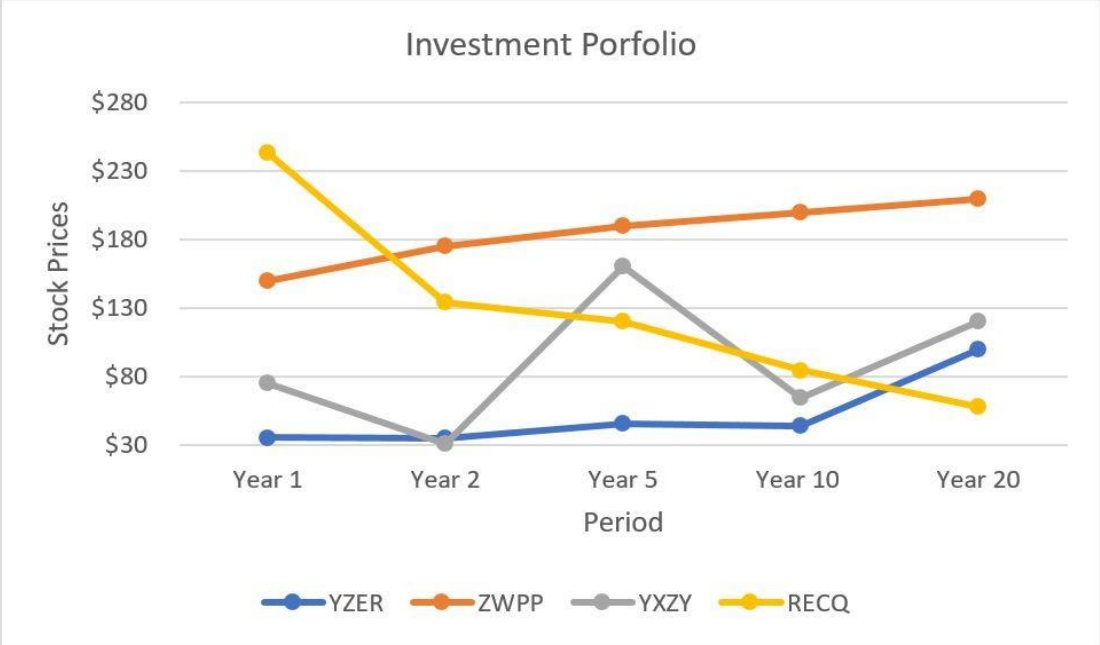
1. Identify an appropriate visualization that compares the yearly depreciation expense for each of the three depreciation methods. Explain your reasoning on why you chose this visualization. How would the data elements be shown on the visualization?
2. List 3 best practices for the visualization.
Answer:
1. A line chart should be used since the visualization allows you to compare depreciation expenses for each year. The y-axis should show the depreciation expense value and the x-axis should show the time in years. Each line on the chart should represent a different depreciation method.
2.
• Time runs from left to right.
• Be consistent in plotting time points.
• Use solid lines not dotted.
• Use a zero baseline.
• Do not plot more than four lines, instead use multiple charts.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 10
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

91) The manufacturing department for Crystal Lighting has provided you with the following area chart to show the product cost by fiscal quarters. The product cost consists of direct materials costs, direct labor costs and overhead costs. You are asked to review the data visualization.

1. List two best practices for this data visualization that are met.
2. Identify an improvement that can be made to the data visualization and explain why.
Answer:
1.
• The baseline starts at zero or above. In this case it starts at $95,000 which is fine.
• There are no more than four categories used. In this case there are three.

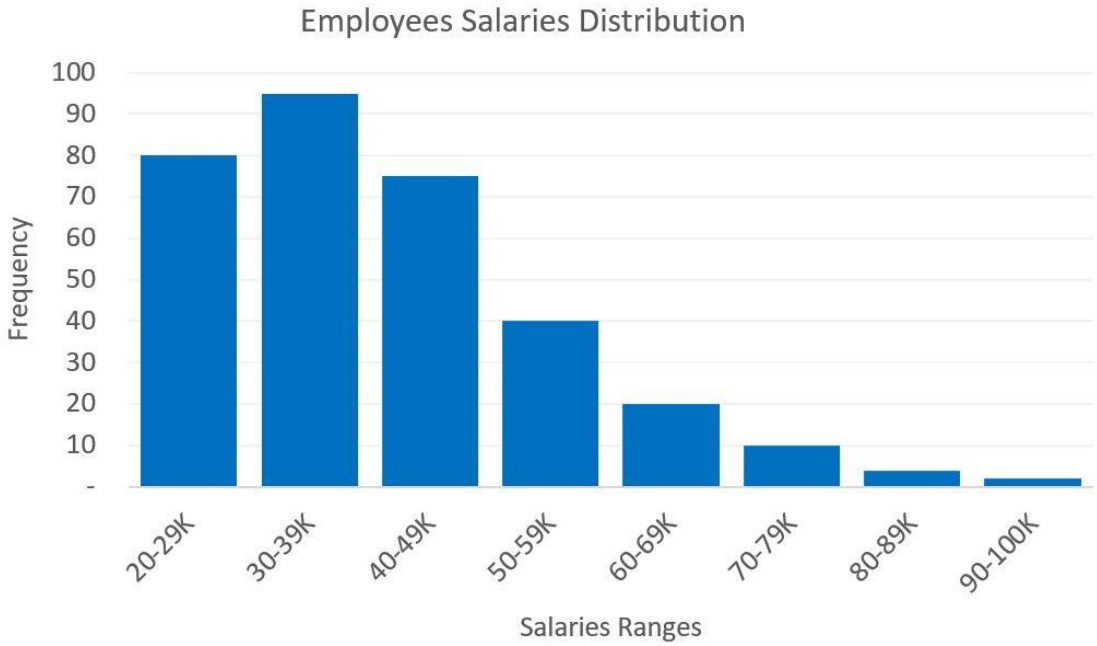
2. Direct materials costs should be at the top of the stacked area since there is more variability in the data. The direct labor costs and overhead costs should be in the lower stacked area so it can be easily shown that the values are more constant.
Diff: 2
LO: 2-5
Bloom: S
Min.: 7
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

92) You are an auditor and need to assess the fair market value of your client's long term investment portfolio. A junior staff provided you with the following data visualization. You review the data visualization.



1. List one best practice for this data visualization that is met.
2. List two improvements that can be made to the data visualization and explain why.
Answer:
1. There are no more than four categories used. In this case there are 4.
2.
• The baseline should start at zero. In this case it starts at $30 which skews the interpretation of the data.
• The time series should be consistent. Since the years are 1, 2, 5, 10, and 20, the data interpretation of the dates is skewed since the dates are not uniform.
Diff: 2
LO: 2-4, 2-5
Bloom: S
Min.: 7
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

93) Compass Partners is looking to increase the salaries for all of its staff. The distribution of salaries has been provided. You review the data visualization.

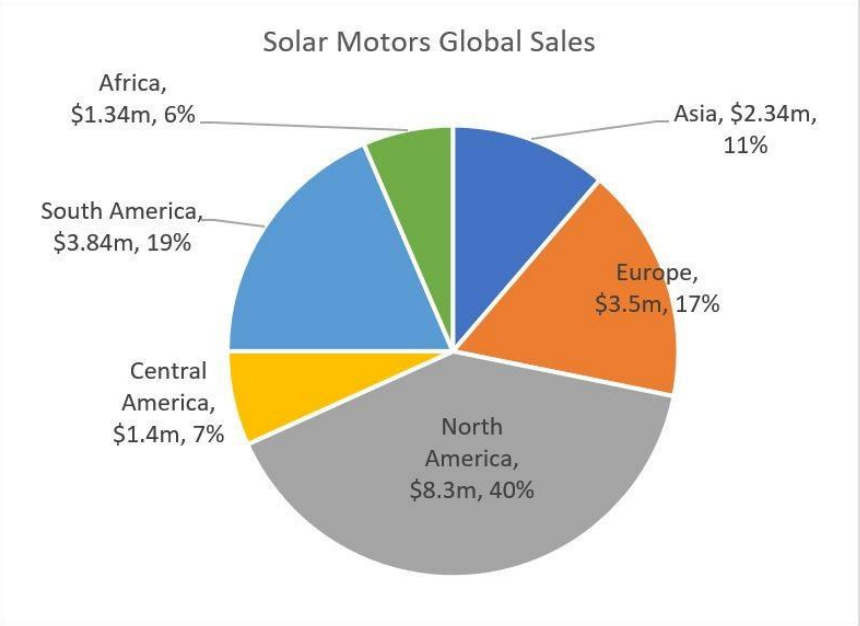


1. List two best practices for this data visualization and assess if they are met.
2. Does the distribution have a positive skew, negative skew or is it symmetrical? Please explain your answer.
3. Comment on the degree of the skewness and the coefficient of skewness value.
Answer:
1.
• Use a zero baseline — this is satisfied.
• Bins are numbers that represent the intervals into — this is satisfied with salaries in intervals of $10,000.
• Use between 5 to 15 bins — this is satisfied.

2. There is a positive skew since the data is right skewed (data tails off to the right).

3. Since the majority of salaries are in the first three bars of the salary bins, we can conclude that there is a high degree of skewness, and the coefficient of skewness value is expected to be greater than 1.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 7
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

94) Solar Motors is a manufacturer of solar-powered vehicles. You are presented with the data visualization of the sales revenue by region. You are asked to review the data visualization.



1. List two best practices for this data visualization that are met.
2. Identify a best practice for this data visualization that is not met.
3. What data visualization should be used instead of a pie chart? How would the data elements be shown on the visualization?
Answer:
1.
• Make sure the data adds to 100%.
• Start the first segment at 12 o'clock position.

2. Limit the chart to a max of five segments. The visualization has 6 segments.

3. A bar chart can be used to show sales regions and their corresponding sales. The y-axis should show the sales revenue value and the x-axis should show the sales regions.
Diff: 2
LO: 2-5
Bloom: AP
Min.: 7
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

95) You are an internal auditor for Humber Hospital. Employees at the hospital have purchasing authorizations. Before suppliers are paid, there needs to be a 3-way match, meaning that the quantity on the purchase order (PO), invoice, and goods receipt must match. You are provided with the following tables to run your audit tests. Note that for every OrderID, InvoiceID and GoodsReceiptID, there can be multiple line numbers.

POData
OrderID
LineNumber
ProductNumber
Price
Quantity
EmployeeID
POData
SupplierID

InvoiceData
InvoiceID
OrderID
LineNumber
ProductNumber
Price
Quantity
SupplierID
InvoiceDate

GoodsReceiptData
GoodsReceiptID
LineNumber
EmployeeID
ProductNumber
Quantity
GoodReceiptDate
PackingSlipNumber
SupplierID

Employee
EmployeeID
FirstName
LastName
AuthorizationRole
AuthorizationLimit

Supplier
SupplierID
SupplierName
Street
City
State
PhoneNumber

1. What are the primary keys for each of the tables?
2. What are the foreign keys for each of the tables?
3. What table joins would be used to determine if the employee has authorization to create the purchase order? Indicate the type of join used. What fields would be used in the join? What fields do you need from the table(s) to be able to complete this test?
4. What table joins would be used to determine which invoice should not be paid yet? Indicate the type of join used.

Answer:

1.

PData: The combination of OrderID and LineNumber.
InvoiceData: The combination of InvoiceID and LineNumber
GoodsReceiptData: The combination of GoodsReceiptID and LineNumber
Employee: EmployeeID
Supplier: SupplierID

2.

PData: EmployeeID, SupplierID
InvoiceData: OrderID, SupplierID
GoodsReceiptData: EmployeeID, SupplierID
Employee: None
Supplier: None

3. PData inner join with Employee. EmployeeID in both tables will be used in the join. The price and quantity from the PData would be used to ensure that price multiplied by quantity is less than the AuthorizationLimit from the Employee table. The AuthorizationRole field from the Employee table will also make sure the Employee has the authorization to create the purchase order

4. There would be two joins to InvoiceData. InvoiceData left outer join GoodsReceiptData and InvoiceData left outer join PData. InvoiceData would be the left table and GoodsReceiptData and InvoiceData would be the right tables.

Diff: 3
LO: 2-1
Bloom: S
Min.: 15
AACSB: Analytic
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96) You are a tax accountant. You need to calculate the capital gains from your client's investment account. Some of the investments are in foreign currencies. The foreign exchange rate needs to be applied to the purchase and sale of the investment. You are given the following tables.

TradingTransactions
TransactionID
BuyOrSell
StockSymbol
Currency
Quantity
Price
TransactionDate

ForeignExchange
Date
Currency
Rate

1. What are the primary keys for each of the tables?
2. What are the foreign keys for each of the tables?
3. What fields will you use to join the tables?
4. What type of join will be used?
5. Which fields will you need to gather the information to determine the capital gain?
Answer:
1.
TradingTransactions: TransactionID
ForeignExchange: The combination of Date and Currency.

2.
TradingTransactions: Currency and TransactionDate
ForeignExchange: None

3. The Currency and TransactionDate fields from the TradingTransactions table will be used to join with Currency and Date from ForeignExchange.

4. An inner join can be used, assuming that the ForeignExchange table has a complete set of currencies and daily rates.

5. All the fields in the TradingTransactions should be used as well as the Rate field from ForeignExchange.
Diff: 3
LO: 2-1
Bloom: S
Min.: 12
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

97) Button Trust Realtors had 72 home sales over the year. You are interested in determining the distribution of home prices. Descriptive Statistics in Excel was used to analyze the home prices. The results are as follows:

House Sales

Mean	610,387.7302
Standard Error	44,174.45832
Median	558,583.7112
Mode	#N/A
Standard Deviation	374,832.7084
Sample Variance	1.405E+11
Kurtosis	11.5240843
Skewness	3.221472449
Range	2,305,168.243
Minimum	205,710.5721
Maximum	2,510,878.815
Sum	43,947,916.57
Count	72

1. What conclusions can be made on the measure of central tendency?
2. What conclusions can be made on the measure of dispersion?
3. What conclusions can be made on the measure of shape?
4. If you are provided with the date of each sales transaction, what data visualization can be used to show the sales trend? How would the date and sales price be plotted on the data visualization?
Answer:
1. The mean is $610,388 and the median is $558,583. Since the mean is much higher than the median, we can conclude that the home sales had data outliers and have influenced the mean to be a lot higher than the median.

2. The standard deviation is $374,832. Given that the mean is $610,388, we can conclude that the standard deviation is low since it's a lot lower than the mean.

3. The coefficient of skewness is 3.2 which indicates that there is a high degree of skewness. Since the value is positive, the data is right skewed (tails off to the right). Since the coefficient of kurtosis is greater than three, the data is somewhat peaked with less dispersion.

4. To show the sales trends over the year, a line chart or column chart can be used. The y-axis can show the home values, and the x-axis can show the sale date.
Diff: 3
LO: 2-4, 2-5
Bloom: S
Min.: 12
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management

98) You are a financial analyst at Steps Depot, a national retailer of shoes. You are asked to analyze the salaries of store managers. The Descriptive Statistic function in Excel was applied and the output are as follows:

	Salary
Mean	74,851.11267
Standard Error	3,456.834684
Median	87,047.00768
Mode	86,447.00768
Standard Deviation	25,636.57216
Sample Variance	657,233,832
Kurtosis	-0.51136098
Skewness	-0.884381972
Range	94,532.06303
Minimum	18,176.59256
Maximum	112,708.6556
Sum	411,6811.197
Count	55

1. What conclusions can be made on the measure of central tendency?
2. What conclusions can be made on the measure of dispersion?
3. What conclusions can be made on the measure of shape?
4. If you are provided with the total revenue of each store, what data visualization can be used to show the relationship between the store revenue and store manager salaries? How would the store revenue and store manager salary be plotted on the data visualization? What data relationship would you expect to see?

Answer:

1. The mean is $74,851 and the median is $87,047. Since the mean is lower than the median, we can conclude there are some lower salaries that are influencing the mean to be lower than the median.
2. The standard deviation is $25,637. Given that the mean is $74,851, we can conclude that the standard deviation is low since it's a lot lower than the mean.
3. The coefficient of skewness is -0.88 which indicates that there is a moderate degree of skewness. Note that if the absolute value of the coefficient of skewness is between 0.5 and 1, there is a moderate degree of skewness. Since the value is negative, the data is left skewed (tails off to the left).
4. A scatter chart can be used to show the relationship between the store revenue and the store manager's salary. The total revenue can be on the y-axis and the salary can be on the x-axis. We would expect that there is a positive correlation between store revenues and store manager salaries. So higher revenue should correspond with higher salaries. This data relationship may not be true for all instances but any data point that fall outside of this expectation can be further investigated.

Diff: 3
LO: 2-4, 2-5
Bloom: S
Min.: 12
AACSB: Analytic
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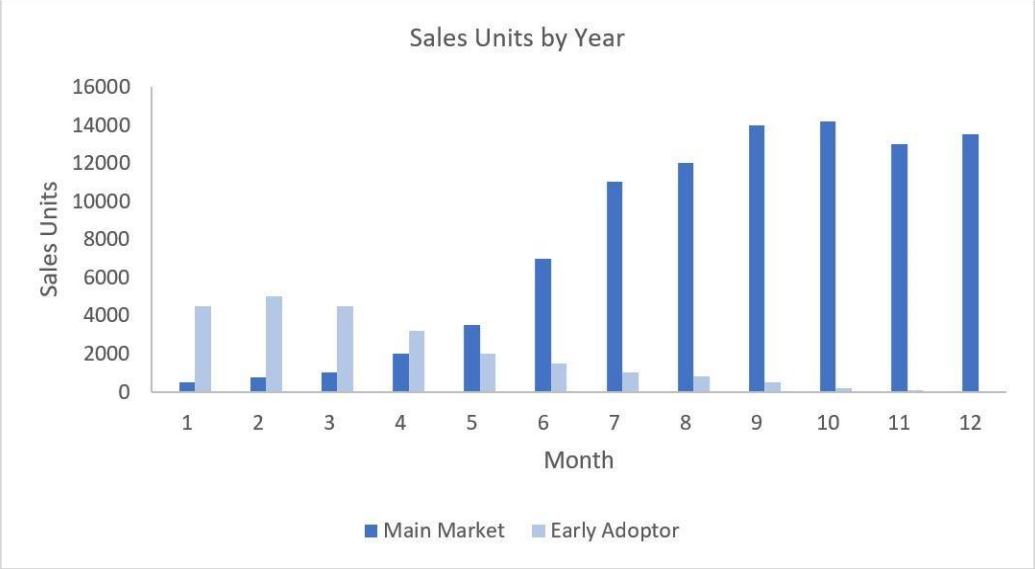
99) Jupiter Technologies is a producer of smart phones. The sales units were plotted for early adopters of new technologies and for the main market. A new phone was launched in month 1.



1. For the main market what is the data relationship between sales units and month? Discuss the possible correlation coefficient value.
2. For early adopters what is the data relationship between sales units and months? Discuss the possible correlation coefficient value.
3. Discuss two data visualizations that can be used to show total sales unit per month and also show the breakdown of sales by early adopters.
Answer:
1. There is a strong positive linear relationship between months and sales units. As months increased, the sales units increased. The correlation coefficient value will be close to +1. It is not a perfect positive linear relationship since the sale units decreased in the 11^{th} and 12^{th} months.

2. There is a strong negative linear relationship between months and sales units. As months increased, the sales units decreased. The correlation coefficient value will be close to -1. It is not a perfect negative linear relationship since the sales units decreased in the 1^{st} and 2^{nd} months.

3. A stack bar chart can be used to show total sales by month. Sales units by early adopters can be stack on top of the sales units by the main market. The y-axis will show the sales units and the x-axis will show the months.

An area chart can be used to show total sales by month. Sales units by early adopters can be shown as an area on top of the sales units by the main market. The y-axis will show the sales units and the x-axis will show the months.
Diff: 3
LO: 2-4, 2-5
Bloom: S
Min.: 12
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100) You are a financial analyst for Trillium Properties. A new rental housing construction project has been completed. The following data set was provided showing labor cost and materials cost by fiscal quarters.

Period	**Labor Cost $**	**Materials Cost $**
Year 1 Q1	155,340	58,489
Year 1 Q2	174,463	59,418
Year 1 Q3	180,489	118,949
Year 1 Q4	183,213	127,255
Year 2 Q1	199,454	249,510
Year 2 Q2	189,905	324,991
Year 2 Q3	237,363	351,903
Year 2 Q4	228,720	332,563
Year 3 Q1	215,349	361,997
Year 3 Q2	191,311	186,534
Year 3 Q3	178,447	77,093
Year 3 Q4	140,073	29,170

1. Identify an appropriate visualization to compare the labor cost and material cost by period. Explain your reasoning. How would the data elements be shown on the visualization?
2. List three best practices for the visualization.
3. The correlation function in Excel generates the following output.

	Labor Costs	Materials Costs
Labor Costs	1	
Materials Costs	0.888838397	1

Interpret the results of the output. Do the results make sense?

Answer:
1. A line chart should be used since the visualization allows you to compare values over a time series. The y-axis should show the costs and the x-axis should show the period. The labor cost and materials cost would be separate lines on the chart.

2.
• Time runs from left to right.
• Be consistent in plotting time points.
• Use solid lines not dotted.
• Use a zero baseline.
• Do not plot more than four lines, instead use multiple chart

3. Since the correlation coefficient value is close to 1, there is a strong positive linear relationship between labor cost and materials cost. So, when material cost increases, labor cost increases. This makes sense since there will be more costs associated to labor if there are more materials for construction.
Diff: 2
LO: 2-4, 2-5
Bloom: S
Min.: 12
AACSB: Analytic
AICPA: FC: Risk Assessment, Analysis, and Management