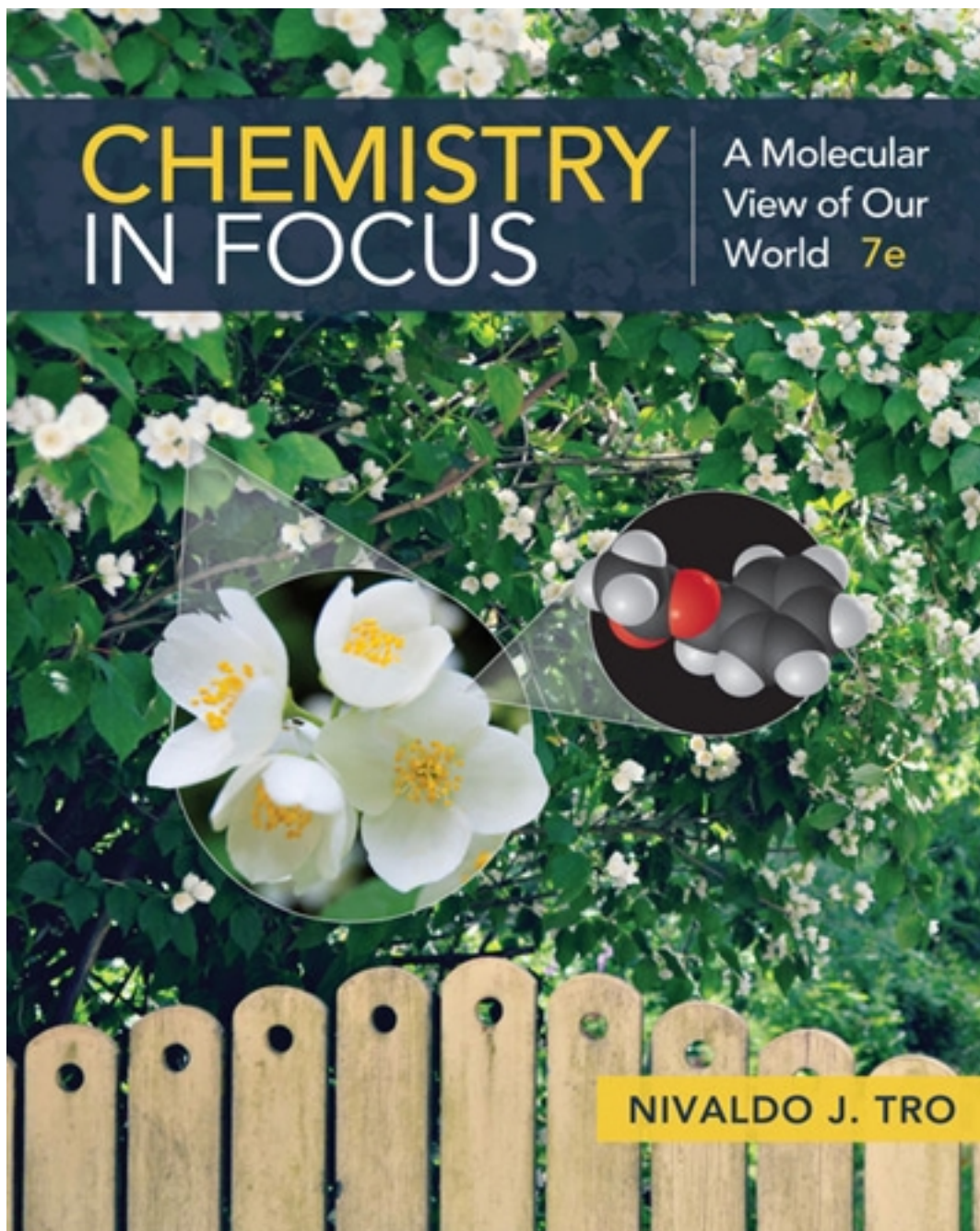


# Test Bank for Chemistry in Focus 7th Edition by Tro

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# Test Bank

## **Chapter 02**

1. The result of an addition or subtraction should have the same number of decimal places as the quantity carrying the \_\_\_\_\_.

- a. the most precise number
- b. the least precise number
- c. highest number of significant figures
- d. least number of significant figures
- e. highest decimal numbers

ANSWER: b

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Measurement

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2. The result of a multiplication or division should carry the same number of significant digits as the factor with the \_\_\_\_\_.

- a. the most precise number
- b. the least precise number
- c. highest number of significant figures
- d. least number of significant figures
- e. highest decimal numbers

ANSWER: d

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Measurement

DATE CREATED: 4/3/2014 7:50 AM

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3. How many significant figures are there in the number 10.00?

- a. 1
- b. 2
- c. 3
- d. 4
- e. 0

ANSWER: d

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Measurement

## **Chapter 02**

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4. How many significant figures are there in the number 10,100?

- a. 1
- b. 3
- c. 4
- d. 5
- e. 0

**ANSWER:** b

**POINTS:** 1

**DIFFICULTY:** Easy

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Measurement

**DATE CREATED:** 4/3/2014 7:50 AM

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5. Determine the density of a 50.0 g sample of mercury having a volume of 3.66 mL. Carry out the calculation to the correct number of significant digits.

- a. 13.66 g/mL
- b. 13.7 mL
- c. 183 g/mL
- d. 0.0732 g/mL
- e. 0.073 g/mL

**ANSWER:** b

**POINTS:** 1

**DIFFICULTY:** Moderate

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Density: A Measure of Compactness

**DATE CREATED:** 4/3/2014 7:50 AM

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6. Determine the density of a 100.0 g sample of mercury having a volume of 7.36 cm<sup>3</sup>. Carry out the calculation to the correct number of significant digits.

- a. 13.58 g/cm<sup>3</sup>
- b. 13.66 g/cm<sup>3</sup>
- c. 183 g/cm<sup>3</sup>
- d. 0.0732 g/cm<sup>3</sup>
- e. 0.073 g/cm<sup>3</sup>

**ANSWER:** a

**POINTS:** 1

## **Chapter 02**

**DIFFICULTY:** Moderate  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Density: A Measure of Compactness  
**DATE CREATED:** 4/3/2014 7:50 AM  
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7. Determine the mass in grams of a gold sample that occupies a volume of 16.39 mL? Gold has a density of 19.3 g/mL.

- a. 0.118 g
- b. 0.316 g
- c. 0.849 g
- d. 1.18 g
- e. 316 g

**ANSWER:** e  
**POINTS:** 1  
**DIFFICULTY:** Moderate  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Density: A Measure of Compactness  
**DATE CREATED:** 4/3/2014 7:50 AM  
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8. Determine the volume occupied by 1.5 g of ethyl alcohol. The density of ethyl alcohol is 0.789 g/mL.

- a. 1.9 mL
- b. 1.3 mL
- c. 0.53 mL
- d. 0.526 mL
- e. 1.331 mL

**ANSWER:** a  
**POINTS:** 1  
**DIFFICULTY:** Moderate  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Density: A Measure of Compactness  
**DATE CREATED:** 4/3/2014 7:50 AM  
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9. Chloroform is a commonly used anesthetic with a density of 1.483 g/mL. Determine the volume of chloroform needed to administer a 9.37 g sample of the anesthetic.

- a. 0.158 g
- b. 6.32 g
- c. 13.9 g
- d. 13.89 g
- e. 0.0632 g

**Chapter 02**

ANSWER: b  
POINTS: 1  
DIFFICULTY: Moderate  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Density: A Measure of Compactness  
DATE CREATED: 4/3/2014 7:50 AM  
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10. If 15.0 mL of a metal has a mass of 103.0 g, what is the density of the metal?

- a. 6.87 g/mL
- b. 1550 g/ mL
- c. 0.146 g/mL
- d. 1.46 g/mL
- e. 9.867 g/mL

ANSWER: a  
POINTS: 1  
DIFFICULTY: Moderate  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Density: A Measure of Compactness  
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11. The density of gold is 19.3 g/mL. If the current price of gold is \$56.75 per gram, what is the volume of a nugget of gold worth \$150.00?

- a. 1.15 mL
- b. 0.868 mL
- c. 1.72 mL
- d. 1.27 mL
- e. 0.137 mL

ANSWER: e  
POINTS: 1  
DIFFICULTY: Moderate  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Density: A Measure of Compactness  
DATE CREATED: 4/3/2014 7:50 AM  
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12. What is the standard SI unit for mass?

- a. Gram
- b. Pound
- c. Ounce

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d. Kilogram

e. Ton

ANSWER: d

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Units in Measurement

DATE CREATED: 4/3/2014 7:50 AM

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13. What is the standard SI unit for length?

a. Meter

b. Feet

c. Mile

d. Kilometer

e. Centimeter

ANSWER: a

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Units in Measurement

DATE CREATED: 4/3/2014 7:50 AM

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14. What is the correct SI unit for time?

a. Millisecond

b. Hour

c. Second

d. Minute

e. Microsecond

ANSWER: c

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Units in Measurement

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15. Which of these represents the SI prefix for micro ( $\mu$ )?

a.  $10^{-6}$

b.  $10^{-3}$

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c.  $10^{-9}$

d.  $10^{-2}$

e.  $10^6$

ANSWER: a

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Units in Measurement

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16. Which of these represents the SI prefix for centi (c)?

a.  $10^{-6}$

b.  $10^{-3}$

c.  $10^{-1}$

d.  $10^{-2}$

e. 102

ANSWER: d

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Units in Measurement

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17. Which of these represents the SI prefix for mega (M)?

a.  $10^9$

b.  $10^6$

c.  $10^3$

d.  $10^{-2}$

e.  $10^{-6}$

ANSWER: b

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Units in Measurement

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18. The diameter of the nucleus of an atom is approximately  $1 \times 10^{-13}$  m. If 1 nm is equal to  $10 \text{ \AA}$ , what is the diameter of the nucleus in  $\text{\AA}$ ? (1 nm =  $1 \times 10^{-9}$ m)

- a.  $1 \times 10^{-21} \text{ \AA}$
- b.  $1 \times 10^{-6} \text{ \AA}$
- c.  $1 \times 10^{-5} \text{ \AA}$
- d.  $1 \times 10^{-4} \text{ \AA}$
- e.  $1 \times 10^{-3} \text{ \AA}$

ANSWER: e  
 POINTS: 1  
 DIFFICULTY: Easy  
 QUESTION TYPE: Multiple Choice  
 HAS VARIABLES: False  
 TOPICS: Units in Measurement  
 DATE CREATED: 4/3/2014 7:50 AM  
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19. Convert 89.5 m to millimeters.

- a.  $8.95 \times 10^4 \text{ mm}$
- b.  $8.95 \times 10^{-4} \text{ mm}$
- c.  $8.95 \times 10^2 \text{ mm}$
- d.  $8.95 \times 10^{-2} \text{ mm}$
- e.  $8.95 \times 10^5 \text{ mm}$

ANSWER: a  
 POINTS: 1  
 DIFFICULTY: Easy  
 QUESTION TYPE: Multiple Choice  
 HAS VARIABLES: False  
 TOPICS: Units in Measurement  
 DATE CREATED: 4/3/2014 7:50 AM  
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20. Which of the following is not true?

- a. 1 cm = .01 m
- b. 100 cm = 1 m
- c. 1 cm = 100m
- d. .01 cm = .0001m
- e. 10000 cm = 100 m

ANSWER: c  
 POINTS: 1  
 DIFFICULTY: Easy  
 QUESTION TYPE: Multiple Choice



**Chapter 02**

HAS VARIABLES: False

TOPICS: Units in Measurement

DATE CREATED: 4/3/2014 7:50 AM

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21. Given that 1 in = 2.54 cm, which of the following is true?

a.  $1 \text{ in}^2 = 2.54 \text{ cm}^2$

b.  $1 \text{ in}^2 = 5.08 \text{ cm}^2$

c.  $1 \text{ in}^2 = 6.45 \text{ cm}^2$

d.  $1 \text{ in}^2 = 1.27 \text{ cm}^2$

e.  $1 \text{ in}^2 = 10.16 \text{ cm}^2$

ANSWER: c

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Converting Between Units

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22. One  $\text{m}^3$  equals \_\_\_\_\_.

a.  $1000 \text{ mm}^3$

b.  $1,000,000 \text{ mm}^3$

c.  $1,000,000,000 \text{ mm}^3$

d.  $1,000,000,000,000 \text{ mm}^3$

e.  $1,000,000,000,000,000 \text{ mm}^3$

ANSWER: c

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Converting Between Units

DATE CREATED: 4/3/2014 7:50 AM

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23. One milliliter is equal to \_\_\_\_\_.

a. 2.54 cubic inches

b. 1000 liters

c. 1 cubic centimeter

d. 16.39 cubic inches

e. 0.6214 cubic inches

ANSWER: c

**Chapter 02**

POINTS: 1  
DIFFICULTY: Easy  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Converting Between Units  
DATE CREATED: 4/3/2014 7:50 AM  
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24. One in<sup>3</sup> equals \_\_\_\_\_.

- a. 2.54 cm<sup>3</sup>
- b. 7.62 cm<sup>3</sup>
- c. 16.38 cm<sup>3</sup>
- d. 0.394 cm<sup>3</sup>
- e. 3.94 cm<sup>3</sup>

ANSWER: c  
POINTS: 1  
DIFFICULTY: Easy  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Converting Between Units  
DATE CREATED: 4/3/2014 7:50 AM  
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25. The long jump record is 8.90 m. What is the length in inches? (1 m = 39.37 in)

- a. 9.73 in
- b. 293 in
- c. 350 in
- d. 4204 in
- e. 5000 in

ANSWER: c  
POINTS: 1  
DIFFICULTY: Easy  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Converting Between Units  
DATE CREATED: 4/3/2014 7:50 AM  
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26. The long jump record is 8.90 m. What is the length in yards? (1 yd = 0.9144 m)

- a. 9.73 yd
- b. 293 yd
- c. 350 yd
- d. 4204 yd

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e. 5000 yd

ANSWER: a

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Converting Between Units

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27. A football field is 100.0 yd long. What is its length in meters? (1 yd = 0.9144 m)

a. 0.09144 m

b. 91.44 m

c. 274.32 m

d. 334 m

e.  $9.144 \times 10^3$  m

ANSWER: b

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Converting Between Units

DATE CREATED: 4/3/2014 7:50 AM

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28. A football field is 100 yd long. What is its length in centimeters? (1 yd = 0.9144 m)

a. 0.09144 cm

b. 91.44 cm

c. 274.32 cm

d. 334 cm

e.  $9.144 \times 10^3$  cm

ANSWER: e

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Converting Between Units

DATE CREATED: 4/3/2014 7:50 AM

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29. How many kilograms of calcium are there in 173 lb of calcium? (1 lb = 454 g)

a. 1.1 kg

b. 78.54 kg

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- c.  $1.1 \times 10^2$  kg
- d.  $3.8 \times 10^4$  kg
- e.  $7.85 \times 10^4$  kg

ANSWER: b  
POINTS: 1  
DIFFICULTY: Easy  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Converting Between Units  
DATE CREATED: 4/3/2014 7:50 AM  
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30. Most races are now measured in kilometers. What is the distance in miles a runner must complete in a 10-kilometer run? (1 km = 0.62137 mile)

- a. 3.1 miles
- b. 6.2 miles
- c. 16.1 miles
- d. 32.2 miles
- e. 62.137 miles

ANSWER: b  
POINTS: 1  
DIFFICULTY: Easy  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Converting Between Units  
DATE CREATED: 4/3/2014 7:50 AM  
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31. Convert  $2.50 \times 10^4$  meters to miles. (1 km = 0.62137 mile)

- a. 76.2 miles
- b. 6.35 miles
- c. 15.5 miles
- d. 155 miles
- e. 186 miles

ANSWER: c  
POINTS: 1  
DIFFICULTY: Moderate  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Converting Between Units  
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## **Chapter 02**

32. Convert 10.5 mm/s to ft/hr.

- a. 124 ft/hr
- b.  $9.57 \times 10^{-6}$  ft/hr
- c. .0344 ft/hr
- d. 37800 ft/hr
- e. 0.125 ft/hr

ANSWER: a

POINTS: 1

DIFFICULTY: Difficult

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Converting Between Units

DATE CREATED: 4/3/2014 7:50 AM

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33. Which among the following has the most number of significant figures?

- a. 0.5071
- b. 0.201
- c.  $6.02 \times 10^{23}$
- d. 51
- e. 103

ANSWER: a

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Units in Measurement

DATE CREATED: 4/3/2014 7:50 AM

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34. Solve the problem.

$3.728 + 6.272 = \underline{\hspace{2cm}}$

- a. 10
- b. 10.0
- c. 10.00
- d. 10.000
- e. 10.0000

ANSWER: d

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Problem Solving

**Chapter 02**

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35. Solve the problem.

$$3.72 \times 10^8 \times 9.26 \times 10^{-3} = \underline{\hspace{2cm}}$$

- a.  $3.44 \times 10^6$
- b.  $4.02 \times 10^{10}$
- c.  $3.45 \times 10^5$
- d.  $3.44 \times 10^{-4}$
- e.  $4.02 \times 10^{-10}$

ANSWER: a

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Problem Solving

DATE CREATED: 4/3/2014 7:50 AM

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36. Solve the problem.

$$1.5 \times 10^3 + 3.14 \times 10^4 - 1.21 \times 10^2 = \underline{\hspace{2cm}}$$

- a.  $3.28 \times 10^4$
- b.  $3.30 \times 10^3$
- c.  $3.3 \times 10^{-4}$
- d.  $3.30 \times 10^5$
- e.  $3.43 \times 10^9$

ANSWER: a

POINTS: 1

DIFFICULTY: Moderate

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Problem Solving

DATE CREATED: 4/3/2014 7:50 AM

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37. Solve the problem.

$$(5.46 \times 10^7 + 3.13 \times 10^6) \times (7.65 \times 10^5) = \underline{\hspace{2cm}}$$

- a.  $65.7 \times 10^{18}$
- b.  $130.7 \times 10^{18}$

## **Chapter 02**

c.  $4.42 \times 10^{13}$

d.  $2.39 \times 10^{12}$

e.  $65.7 \times 10^8$

ANSWER: c

POINTS: 1

DIFFICULTY: Moderate

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Problem Solving

DATE CREATED: 4/3/2014 7:50 AM

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38. Solve the problem.

$(3.21 \times 10^{10} - 3.13 \times 10^{12}) \div (7.65 \times 10^5) = \underline{\hspace{2cm}}$

a.  $4.13 \times 10^6$

b.  $2.37 \times 10^{18}$

c.  $65.7 \times 10^{18}$

d.  $-23.7 \times 10^{17}$

e.  $-4.04 \times 10^6$

ANSWER: e

POINTS: 1

DIFFICULTY: Moderate

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Problem Solving

DATE CREATED: 4/3/2014 7:50 AM

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39. Solve the problem.

$(12.67 \times 4.23) \div 23.42 = \underline{\hspace{2cm}}$

a. 2.3587

b. 2.6334

c. 2.2289

d. 2.8800

e. 2.2884

ANSWER: e

POINTS: 1

DIFFICULTY: Moderate

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Problem Solving



## **Chapter 02**

**DATE CREATED:** 4/3/2014 7:50 AM

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40. Which among the following is an equivalent of 0.01% ?

- a. 100 ppm
- b. 100 ppb
- c. 0.000001 ppm
- d. 0.000001 ppb
- e. 0.0001 ppm

**ANSWER:** a

**POINTS:** 1

**DIFFICULTY:** Moderate

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Reading Graphs

**DATE CREATED:** 4/3/2014 7:50 AM

**DATE MODIFIED:** 1/23/2018 7:51 AM

41. Which of these is the correct scientific notation for 6,000,220?

- a.  $6.022 \times 10^5$
- b.  $6.00022 \times 10^5$
- c.  $6.00022 \times 10^6$
- d.  $6.00022 \times 10^{-5}$
- e.  $6.00022 \times 10^{-6}$

**ANSWER:** c

**POINTS:** 1

**DIFFICULTY:** Moderate

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Scientific Notation

**DATE CREATED:** 4/3/2014 7:50 AM

**DATE MODIFIED:** 1/23/2018 7:53 AM

42. Which of the following is correctly written using scientific notation?

- a.  $50.0 \times 10^6$
- b.  $4.02 \times 10^{216}$
- c.  $1 \times 10^{-6.8}$
- d.  $1.005 \times 10^{-9.05}$
- e.  $10^{-5}$

**ANSWER:** b

**POINTS:** 1

**DIFFICULTY:** Moderate

## Chapter 02

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Scientific Notation

DATE CREATED: 4/3/2014 7:50 AM

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43. Which of these is **incorrect**?

a. centi (c) =  $10^{-2}$

b. mega (M) =  $10^6$

c. milli (m) =  $10^{-3}$

d. nano (n) =  $10^9$

e. micro ( $\mu$ ) =  $10^{-6}$

ANSWER: d

POINTS: 1

DIFFICULTY: Moderate

QUESTION TYPE: Multiple Choice

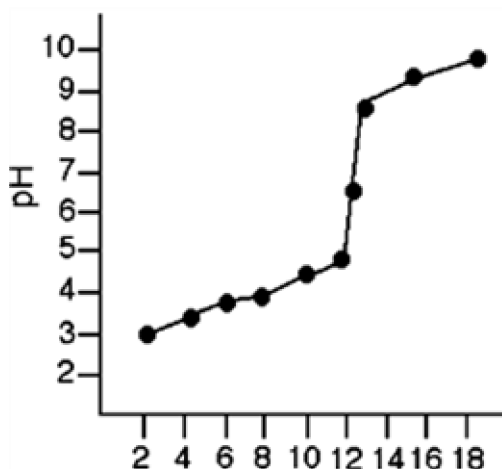
HAS VARIABLES: False

TOPICS: Units in Measurement

DATE CREATED: 4/3/2014 7:50 AM

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Figure 2-1



44. Refer to Figure 2-1. What is the pH of the solution after 8 mL of the base has been added?

a. 3

b. 4

c. 6

d. 7

e. 8

ANSWER: b

POINTS: 1

DIFFICULTY: Easy

## Chapter 02

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

PREFACE NAME: Figure 2-1

TOPICS: Reading Graphs

DATE CREATED: 4/3/2014 7:50 AM

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45. Refer to Figure 2-1. What was the effect on the pH of the solution when the volume of the base was increased from 8 mL to 13 mL?

- a. The pH dropped by a value of 4.
- b. The pH increased by a value of 4.
- c. The pH remained relatively unchanged.
- d. The pH increased by a value of 10.
- e. The pH increased by a value of 20.

ANSWER: b

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

PREFACE NAME: Figure 2-1

TOPICS: Reading Graphs

DATE CREATED: 4/3/2014 7:50 AM

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46. Refer to Figure 2-1. Which of these statements is **true** based on the data provided by the graph?

- a. The pH of the solution must be determined algebraically.
- b. The pH of the solution is relatively unaffected by the addition of the base.
- c. The pH of the solution is 7 when approximately 16 mL of the base has been added.
- d. The pH of the solution is relatively constant after the addition of the first 14 mL of the base.
- e. The pH of the solution rises significantly when the volume of the base is increased from 14 mL to 18 mL.

ANSWER: e

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

PREFACE NAME: Figure 2-1

TOPICS: Reading Graphs

DATE CREATED: 4/3/2014 7:50 AM

DATE MODIFIED: 1/23/2018 8:05 AM

47. Which of these numbers has four significant figures?

- a. 0.3211
- b. 0.201
- c.  $6.02 \times 10^{23}$

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d. 510

e. 0.0103

ANSWER: a

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Measurement

DATE CREATED: 4/3/2014 7:50 AM

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48. Solve the problem.

$$131.7 \times 1.05 = \underline{\hspace{2cm}}$$

a.  $1.38 \times 10^3$

b.  $1.38 \times 10^2$

c.  $1.3 \times 10^3$

d.  $1.3 \times 10^3$

e.  $1.3 \times 10^{-3}$

ANSWER: b

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Problem Solving

DATE CREATED: 4/3/2014 7:50 AM

DATE MODIFIED: 1/23/2018 8:08 AM

49. Solve the problem.

$$33.5 \div 3.011 = \underline{\hspace{2cm}}$$

a.  $1.11 \times 10^1$

b.  $1.11 \times 10^3$

c.  $1.113 \times 10^1$

d.  $1.11 \times 10^2$

e.  $1.112587 \times 10^1$

ANSWER: a

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Problem Solving

DATE CREATED: 4/3/2014 7:50 AM

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50. Which of these is the correct normal decimal notation for  $5.23 \times 10^{-4}$ ?

- a. 0.0523
- b. 0.00523
- c. 0.0000523
- d. 0.000523
- e. 52,300

ANSWER: d

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Scientific Notation

DATE CREATED: 4/3/2014 7:50 AM

DATE MODIFIED: 4/3/2014 7:50 AM

51. Which of these is the correct normal notation for  $7.77 \times 10^7$ ?

- a. 0.000000777
- b. 0.0777
- c. 7,770
- d. 7,770,000
- e. 77,700,000

ANSWER: e

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

TOPICS: Scientific Notation

DATE CREATED: 4/3/2014 7:50 AM

DATE MODIFIED: 4/3/2014 7:50 AM

52. Which of these is the correct normal notation for  $8.14 \times 10^5$ ?

- a. 0.0000814
- b. 0.000814
- c. 81.400
- d. 814,000
- e. 81,400,000

ANSWER: d

POINTS: 1

DIFFICULTY: Easy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

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**TOPICS:** Scientific Notation

**DATE CREATED:** 4/3/2014 7:50 AM

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53. Which of these series provides the correct ascending order of values given?

- I. 100 cm
  - II. 1 km
  - III. 10 m
  - IV. 100,000 mm
- a.  $I < II < III < IV$
  - b.  $II < I < IV < III$
  - c.  $I < II = III < IV$
  - d.  $I < IV < III < II$
  - e.  $I < III < IV < II$

**ANSWER:** e

**POINTS:** 1

**DIFFICULTY:** Easy

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Units in Measurement

**DATE CREATED:** 4/3/2014 7:50 AM

**DATE MODIFIED:** 1/23/2018 8:14 AM

54. Which of these series correctly orders the values given from smallest to largest?

- I. 0.001 Mg
  - II. 2,000,000 ng
  - III. 1 Gg
  - IV. 100,000 cg
- a.  $III < II < I < IV$
  - b.  $II < I < IV < III$
  - c.  $II < I = IV < III$
  - d.  $I < IV = III < II$
  - e.  $I < III < IV < II$

**ANSWER:** c

**POINTS:** 1

**DIFFICULTY:** Easy

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Units in Measurement

**DATE CREATED:** 4/3/2014 7:50 AM

**DATE MODIFIED:** 4/24/2015 6:21 AM

55. Because of the high heat and humidity in the summer in Death Valley, California, a hiker requires about one quart of water for every two miles traveled on foot. If the density of water is 0.999 g/mL at 45°C, how many kilograms of water are required for a person to walk 30 kilometers in Death Valley? (1 L = 1.0567 qt; 1 km = 0.62317 miles)

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- a. 8.8 kg
- b. 70 kg
- c. 350 kg
- d. 700 kg
- e.  $8.8 \times 10^3$  kg

**ANSWER:** a  
**POINTS:** 1  
**DIFFICULTY:** Difficult  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Problem Solving  
**DATE CREATED:** 4/3/2014 7:50 AM  
**DATE MODIFIED:** 1/23/2018 8:16 AM

56. A sample of molten iron occupies a volume of  $7.11 \times 10^{-3}$  L. If the density of iron is  $7.86 \text{ g/cm}^3$ , what is the mass of iron in grams in the sample?

- a. 0.000904 g
- b. 0.0559 g
- c. 0.904 g
- d. 1.105 g
- e. 55.8846 g

**ANSWER:** e  
**POINTS:** 1  
**DIFFICULTY:** Moderate  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Problem Solving  
**DATE CREATED:** 4/3/2014 7:50 AM  
**DATE MODIFIED:** 1/23/2018 8:18 AM

57. An irregularly shaped piece of metal with a mass of 220 g was placed in a graduated cylinder that contained 35.00 mL of water. This raised the water level to 52.50 mL. What is the density of the metal?

- a. 0.285 g/mL
- b. 4.19 g/mL
- c. 17.5 g/mL
- d. 12.6 g/mL
- e. 38.5 g/mL

**ANSWER:** d  
**POINTS:** 1  
**DIFFICULTY:** Moderate  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Problem Solving  
**DATE CREATED:** 4/3/2014 7:50 AM



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**DATE MODIFIED:** 1/23/2018 8:19 AM

58. An irregularly shaped piece of metal with a mass of 105 g was placed in a graduated cylinder that contained 25.00 mL of water. This raised the water level to 45.35 mL. What is the density of the metal?

- a. 0.238 g/mL
- b. 2.3 g/mL
- c. 4.2 g/mL
- d. 5.16 g/mL
- e. 20.35 g/mL

**ANSWER:** d

**POINTS:** 1

**DIFFICULTY:** Moderate

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Problem Solving

**DATE CREATED:** 4/3/2014 7:50 AM

**DATE MODIFIED:** 1/23/2018 8:20 AM

59. Convert 4.5 inches to **meters**. (2.54 cm = 1 inch)

- a. 0.1143 m
- b. 1.77 m
- c. 11.43 m
- d. 0.0177 m
- e. 1143 m

**ANSWER:** a

**POINTS:** 1

**DIFFICULTY:** Moderate

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Converting Between Units

**DATE CREATED:** 4/3/2014 7:50 AM

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60. Determine the volume in liters of a 1.00-ounce bottle. (1.06 qt = 1 L; 32 ounces = 1 qt)

- a. 0.0295 L
- b. 0.03125 L
- c. 0.03313 L
- d. 30.2 L
- e. 33.9 L

**ANSWER:** a

**POINTS:** 1

**DIFFICULTY:** Moderate

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

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**TOPICS:** Converting Between Units

**DATE CREATED:** 4/3/2014 7:50 AM

**DATE MODIFIED:** 1/23/2018 8:23 AM

61. A regulation soccer field is 110.0 yards in length. Calculate the length in millimeters. (1.094 yards = 1 m)

- a. 0.101 mm
- b. 1.01 mm
- c. 100.5 mm
- d.  $1.01 \times 10^4$  mm
- e.  $1.01 \times 10^5$  mm

**ANSWER:** e

**POINTS:** 1

**DIFFICULTY:** Moderate

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Converting Between Units

**DATE CREATED:** 4/3/2014 7:50 AM

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62. A 5 ft 7 in track athlete weighs 110 pounds. What is her height in cm and her weight in kilograms? (2.54 cm = 1 inch; 454 g = 1 pound)

- a. 14.5 cm and 242 kg
- b. 152 cm and 49.9 kg
- c. 170 cm and 49.9 kg
- d. 154 cm and 242 kg
- e. 152 cm and  $4.99 \times 10^4$  kg

**ANSWER:** c

**POINTS:** 1

**DIFFICULTY:** Moderate

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Converting Between Units

**DATE CREATED:** 4/3/2014 7:50 AM

**DATE MODIFIED:** 1/23/2018 8:25 AM

63. Chemical waste is often shipped in 55-gallon drums. What is the weight in pounds of a 55-gallon drum if the density of the waste is  $1.5942 \text{ g/cm}^3$ ? (454 g = 1 pound;  $0.9463 \text{ L} = 1 \text{ quart}$ ; 4 quarts = 1 gallon)

- a. 130 lbs
- b. 731 lbs
- c. 810 lbs
- d.  $4.5 \times 10^4$  lbs
- e.  $5.9 \times 10^4$  lbs

**ANSWER:** b

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**POINTS:** 1  
**DIFFICULTY:** Difficult  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Converting Between Units  
**DATE CREATED:** 4/3/2014 7:50 AM  
**DATE MODIFIED:** 4/24/2015 6:13 AM

64. Solve the problem.

$$5.6 \times 10^2 \times 7.41 \times 10^3 = \underline{\hspace{2cm}}$$

- a.  $232 \times 10^1$
- b.  $7.55 \times 10^5$
- c.  $2.32 \times 10^5$
- d.  $4.1 \times 10^6$
- e.  $232 \times 10^5$

**ANSWER:** d  
**POINTS:** 1  
**DIFFICULTY:** Easy  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Problem Solving  
**DATE CREATED:** 4/3/2014 7:50 AM  
**DATE MODIFIED:** 1/23/2018 8:27 AM

65. What is the mass in kilograms of a 25.00-pound dumbbell? (454 g = 1 pound)

- a.  $1.377 \times 10^{-3}$  kg
- b. 1.377 kg
- c. 11.35 kg
- d.  $1.377 \times 10^3$  kg
- e.  $1.135 \times 10^7$  kg

**ANSWER:** c  
**POINTS:** 1  
**DIFFICULTY:** Easy  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Converting Between Units  
**DATE CREATED:** 4/3/2014 7:50 AM  
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66. An international group of zookeepers with successful breeding programs made the following animal exchanges last year. Using the same bartering system, how many monkeys can a zoo obtain in exchange for 15 flamingos?

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3 oryxes = 1 tiger  
1 camel = 6 anteaters  
1 rhino = 4 monkeys  
3 monkeys = 1 tiger

2 flamingos = 1 anteater  
5 lemurs = 1 rhino  
3 lemurs = 1 camel  
1 rhino = 4 oryxes

- a. 3 monkeys  
b. 5 monkeys  
c. 8 monkeys  
d. 12 monkeys  
e. 15 monkeys

**ANSWER:** a  
**POINTS:** 1  
**DIFFICULTY:** Difficult  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Problem Solving  
**DATE CREATED:** 4/3/2014 7:50 AM  
**DATE MODIFIED:** 4/3/2014 7:50 AM

67. Which of these samples of aluminum will occupy the greatest volume? (Density of aluminum =  $2.70 \text{ g/cm}^3$ ; 454 g = 1 pound)

- a. 10,000 g  
b. 25 pounds  
c. 1 kg  
d.  $5 \times 10^{-2} \text{ L}$   
e. 2,000 mL

**ANSWER:** b  
**POINTS:** 1  
**DIFFICULTY:** Moderate  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Problem Solving  
**DATE CREATED:** 4/3/2014 7:50 AM  
**DATE MODIFIED:** 1/23/2018 8:30 AM

68. Which of these samples of water will have the greatest mass? (Density of water =  $1.00 \text{ g/cm}^3$ ; 454 g = 1 pound)

- a. 10,000 g  
b. 25 pounds  
c. 1 kg  
d.  $5 \times 10^{-2} \text{ L}$   
e. 2,000 mL

**ANSWER:** b  
**POINTS:** 1  
**DIFFICULTY:** Moderate  
**QUESTION TYPE:** Multiple Choice

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*HAS VARIABLES:* False

*TOPICS:* Problem Solving

*DATE CREATED:* 4/3/2014 7:50 AM

*DATE MODIFIED:* 1/23/2018 8:30 AM

69. Solve the following equation for y:

$$3y + 24 = 6y - 3$$

- a. 3
- b. 6
- c. 9
- d. 8
- e. 12

*ANSWER:* c

*POINTS:* 1

*DIFFICULTY:* Easy

*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False

*TOPICS:* Problem Solving

*DATE CREATED:* 4/3/2014 7:50 AM

*DATE MODIFIED:* 1/23/2018 8:32 AM

70. Solve the following equation for y:

$$3y = 24$$

- a. 3
- b. 6
- c. 7
- d. 8
- e. 12

*ANSWER:* d

*POINTS:* 1

*DIFFICULTY:* Easy

*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False

*TOPICS:* Problem Solving

*DATE CREATED:* 4/3/2014 7:50 AM

*DATE MODIFIED:* 1/23/2018 8:33 AM

71. Solve the following equation for z:

$$2(z + 6) - 10 = 42$$

- a. 6
- b. 10
- c. 12
- d. 20

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e. 40

ANSWER: d  
POINTS: 1  
DIFFICULTY: Easy  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Problem Solving  
DATE CREATED: 4/3/2014 7:50 AM  
DATE MODIFIED: 1/23/2018 8:34 AM

72. Solve the following equation for z:

$$4z \div 2z + 3 = 30$$

- a. 2
- b. 6.25
- c. 10
- d. 11
- e. 13.5

ANSWER: e  
POINTS: 1  
DIFFICULTY: Easy  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Problem Solving  
DATE CREATED: 4/3/2014 7:50 AM  
DATE MODIFIED: 1/23/2018 8:36 AM

73. Solve the following equation for x:  $13x = x + 156$ .

- a. 13
- b. 20
- c. 1
- d. 7
- e. 12

ANSWER: a  
POINTS: 1  
DIFFICULTY: Easy  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
TOPICS: Problem Solving  
DATE CREATED: 4/3/2014 7:50 AM  
DATE MODIFIED: 1/23/2018 8:37 AM

74. The \_\_\_\_\_ of a substance is a measure of how much of its mass is in a given amount of space.

- a. volume
- b. density

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- c. weight
- d. force
- e. resistance

**ANSWER:** b  
**POINTS:** 1  
**DIFFICULTY:** Easy  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Density: A Measure of Compactness  
**DATE CREATED:** 1/23/2018 8:37 AM  
**DATE MODIFIED:** 1/23/2018 9:04 AM

75. The equivalent of 1 m is \_\_\_\_\_.

- a. 3.54 in
- b. 5.6 in
- c. 2.5 in
- d. 39.37 in
- e. 31.35 in

**ANSWER:** d  
**POINTS:** 1  
**DIFFICULTY:** Easy  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Converting Between Units  
**DATE CREATED:** 1/23/2018 8:52 AM  
**DATE MODIFIED:** 1/23/2018 8:54 AM

76. The equivalent of 31456 g is \_\_\_\_\_.

- a.  $3.1456 \times 10^{-3}$  mg
- b.  $3.1456 \times 10^{-3}$  kg
- c.  $31.456 \times 10^3$  kg
- d. 314.56 mg
- e.  $3.1456 \times 10^1$  kg

**ANSWER:** e  
**POINTS:** 1  
**DIFFICULTY:** Moderate  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**TOPICS:** Scientific Notation  
**DATE CREATED:** 1/23/2018 8:54 AM  
**DATE MODIFIED:** 1/24/2018 8:52 AM

77. The SI unit of temperature is \_\_\_\_\_.



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- a. kelvin
- b. fahrenheit
- c. celsius
- d. rankine
- e. newton

**ANSWER:** a

**POINTS:** 1

**DIFFICULTY:** Easy

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Units in Measurement

**DATE CREATED:** 1/23/2018 8:56 AM

**DATE MODIFIED:** 1/23/2018 8:57 AM

78. Identify the non-significant term in 0.5467.

- a. 0
- b. 5
- c. 4
- d. 6
- e. 7

**ANSWER:** a

**POINTS:** 1

**DIFFICULTY:** Easy

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**TOPICS:** Measurement

**DATE CREATED:** 1/23/2018 8:58 AM

**DATE MODIFIED:** 1/23/2018 8:59 AM