Chapter 8 Practice Test

For #1 to #4, select the correct answer.

1. What is the solution to the equation
$\frac{1}{3} - \frac{3}{2}x = -\frac{1}{6}$?

A $-\frac{1}{9}$ **B** $\frac{1}{9}$

C $\frac{3}{1}$ **D** $\frac{1}{3}$

2. What is the solution to the equation
$\frac{-5.2}{t} = -3.25$?

A 1.6   **B** -1.6

C 0.625   **D** -0.625

3. What is the solution to the equation
$0.45 - 0.3g = 0.85 + 0.2g$?

A 0.8   **B** -0.8

C 1.25   **D** -1.25

4. Which equation does not have the solution $y = -2$?

A $\frac{y}{4} + 1 = \frac{1}{2}$

B $\frac{7}{8} - \frac{1}{y} = 1\frac{3}{8}$

C $\frac{2y - 1}{4} = \frac{5y - 4}{8}$

D $\frac{2}{3}y + \frac{3}{2} = -\frac{1}{12}y$

Complete the statements in #5 and #6.

5. To solve a linear equation, you isolate the ▇▇▇.

6. For $2.43 = -0.38v$, the solution expressed to the nearest hundredth is $v = $ ▇.

Short Answer

7. Model the solution to the equation $\frac{x}{2} = -\frac{3}{4}$ on a number line. What is the solution?

8. a) Describe the steps you would use to solve the equation $1.5(x + 3) = 0.5(x - 1)$.

    b) How would the steps in part a) be different from those you would use to solve $1.5x + 3 = 0.5x - 1$?

9. Solve and check.

    a) $\frac{a + 1}{2} = \frac{2a - 1}{5}$

    b) $2.8(3d - 2) = -12.32$

10. Solve. Express each solution to the nearest tenth.

    a) $-13.9x = 5.7 - 12.5x$

    b) $0.8(2s + 3) = -0.6(5s - 2)$

11. Precipitation is moisture that falls in the form of rain or snow. The relationship between the depth of rain, r, and the depth of snow, s, that results from equal quantities of precipitation is $\frac{r}{s} = 0.1$.

    a) If a storm delivers 15.5 cm of snow, what depth of rain would result from the same amount of precipitation on a warmer day?

    b) If a storm delivers 2.7 cm of rain, what depth of snow would result from the same amount of precipitation on a colder day?

12. Nav is working part time. She pays a monthly fee of $5.95 for her bank account, plus $0.75 for each deposit or withdrawal. One month, the total cost of her account was $12.70. How many deposits or withdrawals did she make that month?

13. Two computer technicians both charge a fee for a home visit, plus an hourly rate for their work. Dana charges a \$64.95 fee, plus \$45/h. Tom charges a \$79.95 fee, plus \$40/h. For what length of service call do Dana and Tom charge the same amount?

14. The square and the regular pentagon have equal perimeters. What is the perimeter of each shape?

$2d + 3.1$ $1.4 - 2d$
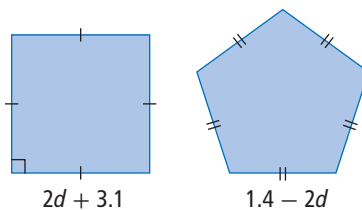
Extended Response

15. a) Identify the error in the following solution.

$$-3.1(2n + 3) = 12.3$$
$$-6.2n + 3 = 12.3$$
$$-6.2n + 3 - 3 = 12.3 - 3$$
$$-6.2n = 9.3$$
$$\frac{-6.2n}{-6.2} = \frac{9.3}{-6.2}$$
$$n = -1.5$$

b) Correct the error in part a) to determine the correct solution. Express your answer to the nearest tenth.

Math Link: Wrap It Up!

The table shows the energy content, in megajoules, of single servings of some common foods.

Food	Serving Size	Energy (MJ)
Brazil nuts (raw)	125 mL	2.03
Buttermilk	250 mL	0.44
Canola oil	15 mL	0.52
Cheddar cheese	45 g	0.76
Corn (boiled)	1 ear	0.35
Lentils (cooked, drained)	250 mL	1.02
Mango (peeled)	1 mango	0.48
Potato (baked)	1 potato	0.94
Salmon (canned)	95 g	0.81

Use data from the table to write a word problem that can be solved using each of the following types of linear equations. Show the complete solutions to your own problems.

Have a classmate check your solutions. Modify your problems or correct your solutions, if necessary.

a) an equation of the form $ax = b$
b) an equation of the form $\frac{x}{a} = b$
c) an equation of the form $ax + b = c$
d) an equation that includes a grouping symbol
e) an equation with the same variable on both sides