

Worked-Out Solutions

This section of the book provides step-by-step solutions to exercises with circled exercise numbers. These solutions provide models that can help guide your work with the homework exercises.

The separate **Selected Answers** section follows this section. It provides numerous answers that you can use to check your own answers.

Chapter 1

Lesson 1.1 (pp. 5–7)

19. three tenths to the fourth power; $(0.3)^4 = 0.3 \cdot 0.3 \cdot 0.3 \cdot 0.3$

35. $\left(\frac{3}{5}\right)^3 = \frac{3}{5} \cdot \frac{3}{5} \cdot \frac{3}{5} = \frac{27}{125}$

51. a. Total length = $3.5 + 5.5 + 3 = 12$

The total length is 12 inches.

b. Evaluate $12f$ for $f = 12$: $12(12) = 144$

The area of water surface needed is 144 square inches.

Lesson 1.2 (pp. 10–12)

16. $\frac{1}{6}(6 + 18) - 2^2 = \frac{1}{6}(6 + 18) - 4$
 $= \frac{1}{6}(24) - 4$
 $= 4 - 4 = 0$

35. a. Total cost = $3 \cdot 0.99 + 2 \cdot 9.95$
 $= 2.97 + 19.90 = 22.87$

The total cost is \$22.87.

b. Amount of money left = $25 - 22.87 = 2.13$

The amount you have left is \$2.13.

Lesson 1.3 (pp. 18–20)

11. 7 less than twice a number k

Less than is subtraction after the next term, and twice a number is two times a number. The expression is $2k - 7$.

35.

Number of months in y years

 =

Number of months in one year

 +

Number of years

 $= 12y$

The number of months is $12y$.

33. a. 48 ounce container:

$$\frac{\$2.64}{48 \text{ ounces}} = \frac{\$2.64 \div 48}{48 \text{ ounces} \div 48} = \frac{\$.055}{1 \text{ ounce}}$$

The unit rate is \$.055 per ounce.

64 ounce container:

$$\frac{\$3.84}{64 \text{ ounces}} = \frac{\$3.84 \div 64}{64 \text{ ounces} \div 64} = \frac{\$.06}{1 \text{ ounce}}$$

The unit rate is \$.06 per ounce.

b. Since \$.055 is less than \$.06, the 48 ounce container costs less per ounce.

c. Write a verbal model and an expression. Let n be the number of ounces.

Savings	=	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>Unit rate for 64 ounce container</td></tr> </table>	Unit rate for 64 ounce container	•	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>Number of ounces</td></tr> </table>	Number of ounces	–
Unit rate for 64 ounce container							
Number of ounces							
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Unit rate for 48 ounce container							
Number of ounces							

$$= 0.06n - 0.055n$$

Evaluate the expression when $n = 192$.

$$0.06(192) - 0.055(192) = 0.96$$

The amount of money you save is \$.96.

Lesson 1.4 (pp. 24–26)

7. 5 more than a number is written as $t + 5$.

The product of 9 and the quantity 5 more than a number t is written as $9(t + 5)$.

The product of 9 and the quantity 5 more than a number t is less than 6 is written as $9(t + 5) < 6$.