Lesson 61, Lesson Practice

a. Perimeter = 10 cm + 12 cm + 10 cm + 12 cm = **44 cm**

Area = (12 cm)(8 cm) = **96 cm²**

b. Perimeter = 10 cm + 13 cm + 10 cm + 13 cm = **46 cm**

Area = (10 cm)(12 cm) = **120 cm²**

c. Perimeter = 10 cm + 10 cm + 10 cm + 10 cm = **43 cm**

Area = (10 cm)(9 cm) = **90 cm²**

d. $m\angle d = 180° - 75° = \mathbf{105°}$

e. $m\angle e = 180° - 105° = \mathbf{75°}$

f. $m\angle f = m\angle d = \mathbf{105°}$

g. $m\angle g = m\angle e = \mathbf{75°}$

h. $m\angle A = m\angle C = \mathbf{60°}$

i. $m\angle ADB = 180° - (90° + 60°) = 180° - 150° = \mathbf{30°}$

j. $m\angle ABC = 180° - 60° = \mathbf{120°}$

Lesson 61, Mixed Practice

1. $\frac{1}{2}$ gallon = 2 quarts = 4 pints

$4\overline{)\$1.12}$ **$0.28 per pint**

2.

	Ratio	Actual Count
Oatmeal	2	3 cups
Brown sugar	1	B

$\frac{2}{1} = \frac{3 \text{ cups}}{B}$

$2B = 1(3 \text{ cups})$

$B = \frac{3}{2}$ cups = **$1\frac{1}{2}$ cups**

3. 3(55.0 seconds) = 165 seconds

54.3 seconds + 56.1 seconds + n = 165 seconds

n = 165 seconds − 110.4 seconds

n = **54.6 seconds**

4. $\frac{9 \text{ miles}}{60 \text{ minutes}} = \frac{9 \text{ miles}}{1 \text{ hour}} =$ **9 miles per hour**

5.
$$\begin{array}{r} 63{,}100{,}000 \\ -\ 7{,}060{,}000 \\ \hline 56{,}040{,}000 \end{array}$$

56,040,000 = **5.604×10^7**

6. (a) $\frac{7}{10} \times 100\% = \frac{700\%}{10} =$ **70%**

(b) $\frac{\text{news area}}{\text{advertisement area}} = \mathbf{\frac{3}{7}}$

(c) $\frac{\text{advertisement area}}{\text{total area}} = \mathbf{\frac{7}{10}}$

7. (a) **1.05×10^{-3}**

(b) **302,000**

8. $\frac{128}{192} = \frac{\cancel{2}^{1} \cdot \cancel{2}^{1} \cdot \cancel{2}^{1} \cdot \cancel{2}^{1} \cdot \cancel{2}^{1} \cdot \cancel{2}^{1} \cdot 2}{\cancel{2}_{1} \cdot \cancel{2}_{1} \cdot \cancel{2}_{1} \cdot \cancel{2}_{1} \cdot \cancel{2}_{1} \cdot \cancel{2}_{1} \cdot 3} = \mathbf{\frac{2}{3}}$

9. **1760 ~~yards~~ $\cdot \frac{\text{3 feet}}{\text{1 ~~yard~~}}$ = 5280 feet**

10. (a) **Parallelogram**

(b) **Trapezoid**

11. (a) Area = (4 m)(6 m) = **24 m²**

(b) Area = $\frac{(2 \text{ m})(4 \text{ m})}{2}$ = **4 m²**

(c) Area = 24 m² + 4 m² = **28 m²**

12. (a) **Obtuse angle**

(b) **Right angle**

(c) **Acute angle**

13. (a) **8**

(b) **6**

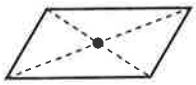
(c) **9**

(d) **2**

14. (a) Perimeter = 12 cm + 16 cm + 12 cm + 16 cm = **56 cm**

(b) Area = (16 cm)(10 cm) = **160 cm²**

(c)



15. (a) $m\angle a = 180° - (59° + 61°)$
$= 180° - 120° = \mathbf{60°}$

(b) $m\angle b = \mathbf{61°}$

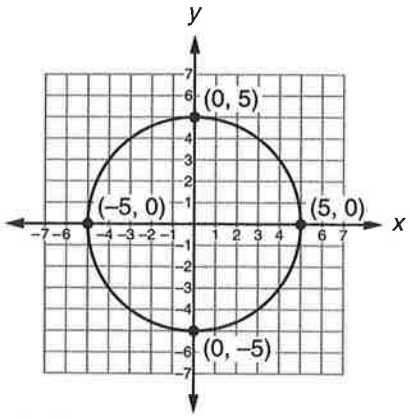
(c) $m\angle c = \mathbf{59°}$

(d) $m\angle d = m\angle a = \mathbf{60°}$

16. $2 \text{ centimeters} \cdot \frac{1 \text{ meter}}{100 \text{ centimeters}}$

$= \frac{2}{100} \text{ meter} = \mathbf{0.02 \text{ meter}}$

17.

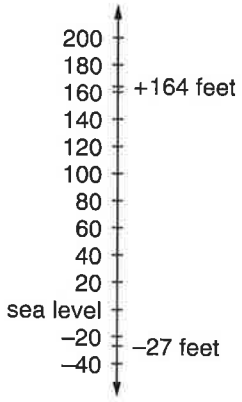


(a) **(0, 5), (0, −5)**

(b) **10 units**

18. **The scale is balanced so the 3 items on the left have a total mass of 50 g. The labeled masses total 15 g, so the cube must be 35 g because 35 g + 15 g = 50 g.**

19.



164 feet
+ 27 feet
191 feet

20. $10 + 10 \times 10 - 10 \div 10$
$10 + 100 - 1$
$110 - 1$
109

21. $2^0 - 2^{-3} = 1 - \frac{1}{2^3}$
$= 1 - \frac{1}{8} = \frac{8}{8} - \frac{1}{8} = \mathbf{\frac{7}{8}}$

22. 70 cm = 0.7 m
4.5 m
+ 0.7 m
5.2 m

23. $2.75 \text{ L} \cdot \frac{1000 \text{ mL}}{1 \text{ L}} = \mathbf{2750 \text{ mL}}$

24. $3\frac{1}{3} = 3\frac{2}{6}$
$-\ 1\frac{1}{2} = 1\frac{3}{6}$ $\longrightarrow$ $2\frac{8}{6}$
$-\ 1\frac{3}{6}$
$1\frac{5}{6}$

$5\frac{7}{8} = 5\frac{21}{24}$
$+\ 1\frac{5}{6} = 1\frac{20}{24}$
$6\frac{41}{24} = \mathbf{7\frac{17}{24}}$

25. $4\frac{4}{5} \cdot 1\frac{1}{9} \cdot 1\frac{7}{8}$

$= \frac{\overset{1}{\cancel{24}}}{\underset{1}{\cancel{5}}} \cdot \frac{10}{\underset{1}{\cancel{9}}} \cdot \frac{\overset{1}{\cancel{15}}}{\underset{1}{\cancel{8}}} = \mathbf{10}$

26. $3\frac{1}{5} \div 8 = \frac{16}{5} \div \frac{8}{1} = \frac{\overset{2}{\cancel{16}}}{5} \times \frac{1}{\underset{1}{\cancel{8}}} = \frac{2}{5}$

$6\frac{2}{3} \div \frac{2}{5} = \frac{20}{3} \div \frac{2}{5} = \frac{\overset{10}{\cancel{20}}}{3} \times \frac{5}{\underset{1}{\cancel{2}}} = \frac{50}{3}$

$= \mathbf{16\frac{2}{3}}$

27.
$$\begin{array}{r} 0.8 \\ +\ 0.97 \\ \hline 1.77 \end{array} \qquad \begin{array}{r} 12.00 \\ -\ 1.77 \\ \hline \mathbf{10.23} \end{array}$$

28.
$$\begin{array}{r} 0.05 \\ \times\ 2.4 \\ \hline 0.12 \end{array} \qquad \begin{array}{r} 0.005 \\ \times\ 0.12 \\ \hline \mathbf{0.0006} \end{array}$$

29. $4 \times 10^2 = 4 \times 100 = 400$
$0.2 \div 400 = \mathbf{0.0005}$

30. $4 \div 0.25 = 16$
$0.36 \div 16 = \mathbf{0.0225}$

Lesson 62, Lesson Practice

a. **Right triangle**

b. **Obtuse triangle**

c. **Acute triangle**

d. **Scalene triangle**

e. **Equilateral triangle**

f. **Isosceles triangle**

g. Perimeter $= 3\text{ cm} + 4\text{ cm} + 4\text{ cm} = \mathbf{11\text{ cm}}$

h. $\angle L, \angle N, \angle M$

Lesson 62, Mixed Practice

1. $4(15\text{ minutes}) = 60\text{ minutes}$
$60\text{ minutes} + 10\text{ minutes} = 70\text{ minutes}$
$= 1\text{ hour }10\text{ minutes}$
2:40 p.m.

2.
$$\begin{array}{r} 40{,}060\text{ miles} \\ -\ 39{,}872\text{ miles} \\ \hline \mathbf{188\text{ miles}} \end{array}$$

3. $\dfrac{188\text{ miles}}{8\text{ gallons}} = \mathbf{23.5\text{ miles per gallon}}$

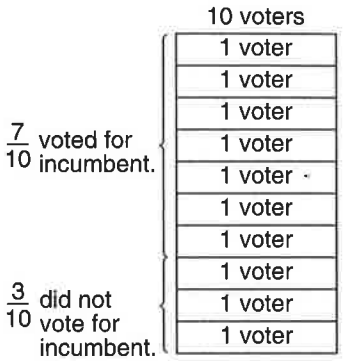
4. $24 \cdot w = 288$
$w = 12$
$24 \div 12 = \mathbf{2}$

5.

	Ratio	Actual Count
Bolsheviks	9	144
Czarists	8	C

$\dfrac{9}{8} = \dfrac{144}{C}$
$9C = 1152$
$C = \mathbf{128\text{ czarists}}$

6.



(a) $\dfrac{7}{10} \times 100\% = \dfrac{700\%}{10} = \mathbf{70\%}$

(b) $\mathbf{\dfrac{3}{10}}$

7. $W_N = \mathbf{\dfrac{5}{6} \times 3\dfrac{1}{3}}$

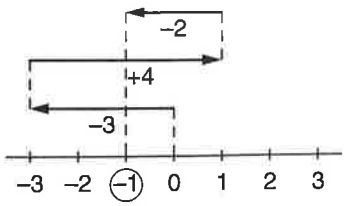
$W_N = \dfrac{5}{\cancel{6}_{3}} \times \dfrac{\cancel{10}^{5}}{3} = \dfrac{25}{9} = \mathbf{2\dfrac{7}{9}}$

8.
$$\begin{array}{r} \$10{,}000 \\ \times\ 0.085 \\ \hline 50\,000 \\ 800\,00 \\ \hline \$850.000 \end{array} = \$850$$
$\$10{,}000 + \$850 = \mathbf{\$10{,}850}$

9. **186,000; one hundred eighty-six thousand**

10. 1 quart ⋚ 1 liter

11.



12. (a) $8\overline{)5.000}$ $\quad \mathbf{0.625}$

(b) $\frac{5}{8} \times 100\% = \frac{500\%}{8} = \mathbf{62\frac{1}{2}\%}$

(c) $275\% = \frac{275}{100} = \frac{11}{4} = \mathbf{2\frac{3}{4}}$

(d) $275\% = \frac{275}{100} = \mathbf{2.75}$

13. $(12) + \frac{(12)}{(3)} - 3 =$

$12 + 4 - 3 = 16 - 3 = \mathbf{13}$

14. (a) 2^8

(b) 2^2

(c) 2^0

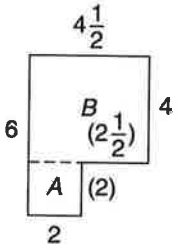
(d) 2^{-2}

15. (a) $\mathbf{\triangle ZWY}$

(b) $\mathbf{\triangle WYX}$

(c) $\mathbf{\triangle ZWX}$

16.



(a) Perimeter $= 4\frac{1}{2}$ in. $+ 4$ in. $+ 2\frac{1}{2}$ in.
$+ 2$ in. $+ 2$ in. $+ 6$ in.
$= \mathbf{21\ in.}$

(b) Area $A = (2\text{ in.})(2\text{ in.}) = 4\text{ in.}^2$
$+$ Area $B = (4\frac{1}{2}\text{ in.})(4\text{ in.}) = 18\text{ in.}^2$
Area of figure $= \mathbf{22\ in.^2}$

17. (a) **Isosceles triangle**

(b) $\frac{180° - 90°}{2} = \frac{90°}{2} = \mathbf{45°}$

(c) Area $= \frac{(6\text{ cm})(6\text{ cm})}{2} = \mathbf{18\ cm^2}$

(d) $\angle C$

18. $7\overline{)1.428}$ $\quad \mathbf{0.204}$

19. $\frac{30}{70} = \frac{w}{\$2.10}$

$70w = 30(\$2.10)$

$w = \frac{\$63.00}{70}$

$w = \mathbf{\$0.90}$

20. $5^2 + 2^5 - \sqrt{49} = 25 + 32 - 7 = \mathbf{50}$

21. $3(8) - (5)(2) + 10 \div 2$

$24 - 10 + 5$

$14 + 5$

$\mathbf{19}$

22. $1\text{ yd } 2\text{ ft } 3\frac{3}{4}\text{ in.}$

$+ \quad 2\text{ ft } 6\frac{1}{2}\text{ in.}$

$1\text{ yd } 4\text{ ft } 10\frac{1}{4}\text{ in.}$

$4\text{ ft} = 1\text{ yd } 1\text{ ft}$

$1\text{ yd } 1\text{ ft } 10\frac{1}{4}\text{ in.}$

$+ 1\text{ yd}$

$\mathbf{2\text{ yd } 1\text{ ft } 10\frac{1}{4}\text{ in.}}$

23. $1\text{ L} = 1000\text{ mL}$,

$1000\text{ mL} - 50\text{ mL} = \mathbf{950\ mL}$

24. $\frac{\overset{1}{\cancel{60}}\text{ mi}}{\cancel{1\text{ hr}}} \cdot \frac{\cancel{1\text{ hr}}}{\underset{1}{\cancel{60}}\text{ min}} = \mathbf{1\ \frac{mi}{min}}$

25. $2\frac{7}{24} = 2\frac{28}{96}$

$+ 3\frac{9}{32} = 3\frac{27}{96}$

$\mathbf{5\frac{55}{96}}$

26. $4\frac{1}{5} \div 1\frac{3}{4} = \frac{21}{5} \div \frac{7}{4} = \frac{\overset{3}{\cancel{21}}}{5} \times \frac{4}{\underset{1}{\cancel{7}}} = \frac{12}{5}$

$2\frac{2}{5} \div \frac{12}{5} = \frac{12}{5} \div \frac{12}{5} = \frac{\overset{1}{\cancel{12}}}{\underset{1}{\cancel{5}}} \times \frac{\overset{1}{\cancel{5}}}{\underset{1}{\cancel{12}}} = \mathbf{1}$

27. $7\frac{1}{2} \div \frac{2}{3} = \frac{15}{2} \div \frac{2}{3}$

$= \frac{15}{2} \times \frac{3}{2} = \frac{45}{4} = 11\frac{1}{4}$

$$\begin{array}{rcl} 20 & \longrightarrow & 19\frac{4}{4} \\ -\ 11\frac{1}{4} & & -\ 11\frac{1}{4} \\ \hline & & \mathbf{8\frac{3}{4}} \end{array}$$

28.



29. $|3 - 4| = |-1| = \mathbf{1}$

30.
$$\begin{array}{r} 1000\text{ g} \\ -\ 250\text{ g} \\ \hline \mathbf{750\text{ g}} \end{array}$$

Lesson 63, Lesson Practice

a. $30 - [40 - (10 - 2)]$

$30 - [40 - (8)]$

$30 - [32]$

$\mathbf{-2}$

b. $100 - 3[2(6 - 2)]$

$100 - 3[2(4)]$

$100 - 3[8]$

$100 - 24$

$\mathbf{76}$

c. $\dfrac{10 + 9 \cdot 8 - 7}{6 \cdot 5 - 4 - 3 + 2}$

$\dfrac{10 + 72 - 7}{30 - 4 - 3 + 2}$

$\dfrac{75}{25}$

$\mathbf{3}$

d. $\dfrac{1 + 2(3 + 4) - 5}{10 - 9(8 - 7)}$

$\dfrac{1 + 14 - 5}{10 - 9}$

$\dfrac{10}{1}$

$\mathbf{10}$

e. $12 + 3(8 - |-2|)$

$12 + 3(8 - 2)$

$12 + 3(6)$

$12 + 18$

$\mathbf{30}$

Lesson 63, Mixed Practice

1. $\$6(3) + \$6(2\frac{1}{2}) = \$18 + \$15 = \mathbf{\$33}$

2. $30\ \cancel{\text{min}} \cdot \dfrac{70\text{ times}}{1\ \cancel{\text{min}}} = 2100\text{ times}$

$30\ \cancel{\text{min}} \cdot \dfrac{150\text{ times}}{1\ \cancel{\text{min}}} = 4500\text{ times}$

$$\begin{array}{r} 4500\text{ times} \\ -\ 2100\text{ times} \\ \hline \mathbf{2400\text{ times}} \end{array}$$

3.

	Ratio	Actual Count
Brachiopods	2	B
Trilobites	9	720

$\frac{2}{9} = \frac{B}{720}$

$9B = 2 \cdot 720$

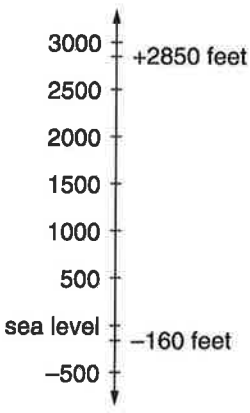
$B = \mathbf{160\text{ brachiopods}}$

4. $5\ \cancel{\text{days}} \cdot \dfrac{18\text{ miles}}{1\ \cancel{\text{day}}} = 90\text{ miles}$

$$\begin{array}{r} 90\text{ miles} \\ 16\text{ miles} \\ +\ 21\text{ miles} \\ \hline 127\text{ miles} \end{array}$$

$$\begin{array}{r} 1017\text{ miles} \\ -\ 127\text{ miles} \\ \hline \mathbf{890\text{ miles}} \end{array}$$

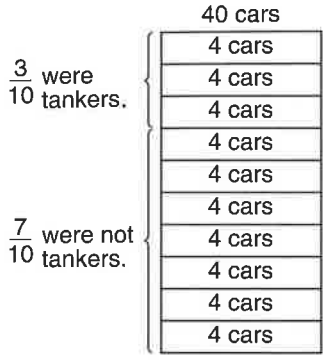
5.



$$\begin{array}{r} 2850\text{ feet} \\ +\ 160\text{ feet} \\ \hline \mathbf{3010\text{ feet}} \end{array}$$

6. **One hundred forty-nine million, six hundred thousand kilometers**

7.



(a) $\frac{3}{10}$

(b) $\frac{7}{10} \times 100\% = \frac{700\%}{10} = \mathbf{70\%}$

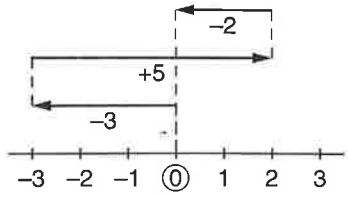
8. **Two thousandths mile per hour**

9. $1.5 \text{ km} \cdot \frac{1000 \text{ m}}{1 \text{ km}} = \mathbf{1500 \text{ m}}$

10.
$$\begin{array}{r} 363.3\ldots \\ 12\overline{)4360.0\ldots} \\ \underline{36} \\ 76 \\ \underline{72} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 4 \end{array}$$

$\mathbf{363.\overline{3}}$

11.



12. (a) $33\% = \mathbf{\frac{33}{100}}$

(b) $33\% = \frac{33}{100} = \mathbf{0.33}$

(c) $3\overline{)1.0}$ $\quad \mathbf{0.\overline{3}}$

(d) $\frac{1}{3} \times 100\% = \frac{100\%}{3} = \mathbf{33\frac{1}{3}\%}$

13. **Divide the "in" number by 3 to find the "out" number.**

14. $\frac{\text{red face card}}{\text{total cards}} = \frac{6}{52} = \mathbf{\frac{3}{26}}$

15. (a) **Isosceles triangle**

(b) Perimeter $= 5 \text{ cm} + 5 \text{ cm} + 5 \text{ cm}$
$= \mathbf{15 \text{ cm}}$

(c) $\boldsymbol{\Delta ABC}$

16. (a) $m\angle BAC = \frac{180°}{3} = \mathbf{60°}$

(b) $m\angle ADB = \frac{180°}{3} = \mathbf{60°}$

(c) $m\angle BDC = 180° - 60° = \mathbf{120°}$

(d) $m\angle DBA = \frac{180°}{3} = \mathbf{60°}$

(e) $m\angle DBC = \frac{180° - 120°}{2} = \frac{60°}{2} = \mathbf{30°}$

(f) $m\angle DCB = m\angle DBC = \mathbf{30°}$

17. $\frac{\text{length of shortest side}}{\text{length of longest side}} = \frac{5}{10} = \mathbf{\frac{1}{2}}$

18.
$$\begin{array}{rl} & \frac{5}{18} = \frac{10}{36} \\ - & \frac{1}{12} = \frac{3}{36} \\ \hline & \mathbf{\frac{7}{36}} \end{array}$$

19. $2 \div 0.4 = \mathbf{5}$

20.
$$3[24 - (8 + 3 \cdot 2)] - \frac{6 + 4}{|-2|}$$
$$3[24 - (8 + 6)] - \frac{6 + 4}{2}$$
$$3[24 - (14)] - \frac{10}{2}$$
$$3[10] - 5$$
$$30 - 5$$
$$\mathbf{25}$$

21.
$$3^3 - \sqrt{3^2 + 4^2}$$
$$27 - \sqrt{9 + 16}$$
$$27 - \sqrt{25}$$
$$27 - 5$$
$$\mathbf{22}$$

22.

$$\begin{array}{r} {\scriptstyle 0}\not{1}\text{ week } 2\text{ days } 7\text{ hr} \\ -\quad\quad 5\text{ days } 9\text{ hr} \end{array} \longrightarrow \text{(7 days)}$$

$$\begin{array}{r} {\scriptstyle 0}\not{1}\text{ week } {\scriptstyle 8}\not{2}\text{ days } 7\text{ hr} \\ -\quad\quad 5\text{ days } 9\text{ hr} \end{array} \longrightarrow \text{(24 hr)}$$

$$\begin{array}{r} {\scriptstyle 0}\not{1}\text{ week } {\scriptstyle 8}\not{2}\text{ days } {\scriptstyle 31}\not{7}\text{ hr} \\ -\quad\quad 5\text{ days } 9\text{ hr} \\ \hline \mathbf{3\text{ days } 22\text{ hr}} \end{array}$$

23. $\dfrac{20\text{ mi}}{1\text{ gal}} \cdot \dfrac{1\text{ gal}}{4\text{ qt}} = \mathbf{5\ \dfrac{mi}{qt}}$

24.

$$\begin{array}{r} 4\frac{2}{3} = 4\frac{12}{18} \\ 3\frac{5}{6} = 3\frac{15}{18} \\ +\ 2\frac{5}{9} = 2\frac{10}{18} \\ \hline 9\frac{37}{18} = \mathbf{11\ \frac{1}{18}} \end{array}$$

25. $12\frac{1}{2} \cdot 4\frac{4}{5} \cdot 3\frac{1}{3}$

$$= \frac{{\scriptstyle 5}\not{25}}{\not{2}_{1}} \cdot \frac{{\scriptstyle 8}\not{24}}{\not{5}_{1}} \cdot \frac{{\scriptstyle 5}\not{10}}{\not{3}_{1}} = \mathbf{200}$$

26. $1\frac{2}{3} \div 3 = \frac{5}{3} \div \frac{3}{1}$

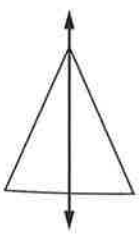
$$= \frac{5}{3} \times \frac{1}{3} = \frac{5}{9}$$

$$\begin{array}{r} 6\frac{1}{3} = 6\frac{3}{9} \longrightarrow 5\frac{12}{9} \\ -\ \frac{5}{9} = \frac{5}{9} \quad\quad -\ \frac{5}{9} \\ \hline \mathbf{5\ \frac{7}{9}} \end{array}$$

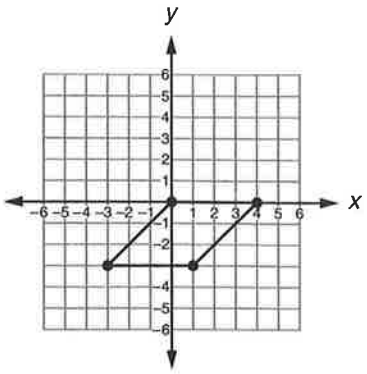
27. $(3)^2 + 2(3)(4) + (4)^2$

$= 9 + 24 + 16 = \mathbf{49}$

28.



29. (a)



(b) Area $=$ (4 units)(3 units)

$=$ **12 sq. units**

(c) $\dfrac{180° - 90°}{2} = \dfrac{90°}{2} = \mathbf{45°}$

30. $3\overline{)750\text{ g}}$ **250 g**

LESSON 64, LESSON PRACTICE

a. $(-56) + (+96) = \mathbf{+40}$

b. $(-28) + (-145) = \mathbf{-173}$

c. $(-5) + (+7) + (+9) + (-3)$
$(+2) + (+9) + (-3)$
$(+11) + (-3)$
$\mathbf{+8}$

d. $(-3) + (-8) + (+15)$
$(-11) + (+15)$
$\mathbf{+4}$

e. $(-12) + (-9) + (+16)$
$(-21) + (+16)$
$\mathbf{-5}$

f. $(+12) + (-18) + (+6)$
$(-6) + (+6)$
$\mathbf{0}$

g. $\left(-3\frac{5}{6}\right) + \left(+5\frac{1}{3}\right)$

$\left(-3\frac{5}{6}\right) + \left(+5\frac{2}{6}\right)$

$\left(-3\frac{5}{6}\right) + \left(+4\frac{8}{6}\right)$

$1\frac{3}{6} = \mathbf{1\frac{1}{2}}$

h. $(-1.6) + (-11.47)$
-13.07

i. **(+$250) + (−$300) + (+$525); The net result was a gain of $475.**

LESSON 64, MIXED PRACTICE

1.
$$\begin{array}{r} 2{,}000{,}000{,}000{,}000 \\ -\ 750{,}000{,}000{,}000 \\ \hline 1{,}250{,}000{,}000{,}000 \end{array}$$
$\mathbf{1.25 \times 10^{12}}$

2. $\$2.25 + \$0.15(42)$
$= \$2.25 + \$6.30 = \$8.55$
$\$10 - \$8.55 = \mathbf{\$1.45}$

3. $5(\$0.25) + 3(\$0.10) + 2(\$0.05)$
$= \$1.25 + \$0.30 + \$0.10$
$= \$1.65$

$$35\overline{)165.00}\quad 4.71$$
4 packages

4. $53 + 59 = \mathbf{112}$

5.
$$\begin{array}{r} 1.74 \\ 2.8 \\ 3.4 \\ 0.96 \\ 2 \\ +\ 1.22 \\ \hline 12.12 \end{array}$$
$12.12 \div 6 = \mathbf{2.02}$

6.

	1200 serfs
$\frac{2}{5}$ were conscripted.	240 serfs
	240 serfs
$\frac{3}{5}$ were not conscripted.	240 serfs
	240 serfs
	240 serfs

(a) **480 serfs**

(b) $\frac{3}{5} \times 100\% = \frac{300\%}{5} = \mathbf{60\%}$

7. $W_N = \frac{5}{9} \times 100$

$W_N = \frac{500}{9}$

$W_N = \mathbf{55\frac{5}{9}}$

8. (a) **Sixteen million degrees Celsius**

(b) **Seven millionths meter**

9. (a) $1.6 \times 10^7 \gtrless 7 \times 10^{-6}$

(b) $7 \times 10^{-6} \gtrless 0$

(c) $2^{-3} \lessgtr 2^{-2}$

10.
$$28\overline{)456.000\ldots}\quad 16.285\ldots$$
$$\begin{array}{r} 28 \\ \hline 176 \\ 168 \\ \hline 80 \\ 56 \\ \hline 240 \\ 224 \\ \hline 160 \\ 140 \\ \hline 20 \end{array}$$

(a) $\mathbf{16\frac{2}{7}}$

(b) **16.29**

(c) **16**

11. (a) $(-63) + (-14) = \mathbf{-77}$

(b) $(-16) + (+20) + (-32) = \mathbf{-28}$

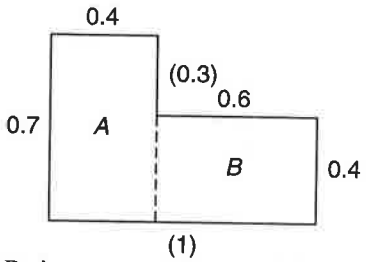
12. $(-\$327) + (+\$280) = -\$47$; **a loss of $47**

13. (a) **60°**

(b) **The chords are $\overline{AB}$ (or $\overline{BA}$), $\overline{BC}$ (or $\overline{CB}$), and $\overline{CA}$ (or $\overline{AC}$). Each chord is shorter than the diameter, which is the longest chord of a circle.**

14. $\left(\frac{2}{3}\right) + \left(\frac{2}{3}\right)\left(\frac{3}{4}\right)$
$= \frac{2}{3} + \frac{1}{2} = \frac{4}{6} + \frac{3}{6} = \frac{7}{6} = \mathbf{1\frac{1}{6}}$

15.



(1)
Perimeter $= 0.7\text{ m} + 0.4\text{ m} + 0.3\text{ m}$
$+ 0.6\text{ m} + 0.4\text{ m} + 1\text{ m} = \mathbf{3.4\text{ m}}$

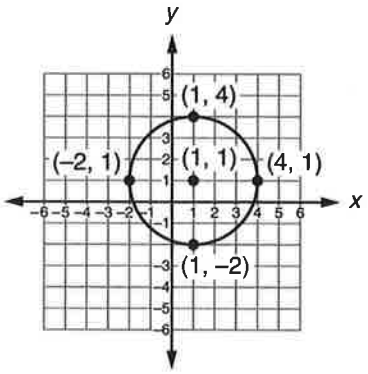
16.
$$\begin{array}{rl} \text{Area } A = (0.7\text{ m})(0.4\text{ m}) & = 0.28\text{ m}^2 \\ +\ \text{Area } B = (0.6\text{ m})(0.4\text{ m}) & = 0.24\text{ m}^2 \\ \hline \text{Area of figure} & = \mathbf{0.52\text{ m}^2} \end{array}$$

17. $12x = 84 \qquad 12y = 48$

$x = 7 \qquad y = 4$

$7 \cdot 4 = \mathbf{28}$

18.



B. $(-2, 1)$

19. $\frac{4}{9} + \frac{2}{9} = \frac{6}{9} = \mathbf{\frac{2}{3}}$

20. $\frac{10}{25} = \mathbf{\frac{2}{5}}$ or **0.4**

21. $\frac{3^2 + 4^2}{\sqrt{3^2 + 4^2}} = \frac{9 + 16}{\sqrt{9 + 16}} = \frac{25}{\sqrt{25}} = \frac{25}{5}$

$= \mathbf{5}$

22. $6 \div 2\frac{1}{2} = \frac{6}{1} \div \frac{5}{2}$

$= \frac{6}{1} \times \frac{2}{5} = \frac{12}{5} = 2\frac{2}{5}$

$2\frac{4}{5} \div 2\frac{2}{5} = \frac{14}{5} \div \frac{12}{5}$

$= \frac{\cancel{14}^{7}}{\cancel{5}_{1}} \times \frac{\cancel{5}^{1}}{\cancel{12}_{6}} = \frac{7}{6} = \mathbf{1\frac{1}{6}}$

23. $100 - [20 + 5(4) + 3(2 + 4^0)]$

$100 - [20 + 20 + 3(2 + 1)]$

$100 - [20 + 20 + 9]$

$100 - [49]$

51

24.

$$\begin{array}{r} 5 \text{ gal } 2 \text{ qt } 1 \text{ pt } 7 \text{ oz} \\ +\ 1 \text{ gal } 1 \text{ qt } 1 \text{ pt } 9 \text{ oz} \\ \hline 6 \text{ gal } 3 \text{ qt } 2 \text{ pt } 16 \text{ oz} \end{array}$$

16 oz = 1 pt, 2 pt + 1 pt = 3 pt

3 pt = 1 qt 1 pt

$$\begin{array}{r} 1 \text{ qt } 1 \text{ pt} \\ +\ 3 \text{ qt} \\ \hline 4 \text{ qt } 1 \text{ pt} \end{array}$$

4 qt = 1 gal, 6 gal + 1 gal = 7 gal, **7 gal 1 pt**

25. $\left(1\frac{1}{2}\right)^2 - \left(4 - 2\frac{1}{3}\right)$

$= \frac{9}{4} - \left(4 - 2\frac{1}{3}\right)$

$= 2\frac{1}{4} - \left(4 - 2\frac{1}{3}\right)$

$$\begin{array}{rcl} 4 & \longrightarrow & 3\frac{3}{3} \\ -\ 2\frac{1}{3} & & -\ 2\frac{1}{3} \\ \hline & & 1\frac{2}{3} \end{array}$$

$$\begin{array}{rcl} 2\frac{1}{4} = 2\frac{3}{12} & \longrightarrow & 1\frac{15}{12} \\ -\ 1\frac{2}{3} = 1\frac{8}{12} & & -\ 1\frac{8}{12} \\ \hline & & \mathbf{\frac{7}{12}} \end{array}$$

26.

$$\begin{array}{r} 0.010 \\ -\ 0.001 \\ \hline 0.009 \end{array} \qquad \begin{array}{r} 0.100 \\ -\ 0.009 \\ \hline \mathbf{0.091} \end{array}$$

27. $5.1 \div 1.5 = 3.4, 5.1 \div 3.4 = \mathbf{1.5}$

28.

$$5\overline{)1.0} \qquad \begin{array}{r} 0.2 \\ \hline 4.375 \\ -\ 3.200 \\ \hline \mathbf{1.175} \end{array}$$

29. $\frac{\text{even primes}}{\text{total}} = \mathbf{\frac{1}{6}}$

30. a) $m\angle B = 180° - 58° = \mathbf{122°}$

b) $m\angle BCD = m\angle A = \mathbf{58°}$

c) $m\angle BCM = 180° - 58° = \mathbf{122°}$

LESSON 65, LESSON PRACTICE

a.

	Ratio	Actual Count
Acrobats	3	A
Clowns	5	C
Total	8	72

$\frac{5}{8} = \frac{C}{72}$

$8C = 360$

$C = \mathbf{45 \text{ clowns}}$

b.

	Ratio	Actual Count
Young men	8	240
Young women	9	W
Total	17	T

$$\frac{8}{17} = \frac{240}{T}$$
$$8T = 4080$$
$$T = \textbf{510 young people}$$

Lesson 65, Mixed Practice

1. (a) $\dfrac{\$2.40}{5 \text{ pounds}} = \dfrac{\$0.48}{1 \text{ pound}}$

\$0.48 per pound

(b)
$$\begin{array}{r} \$0.48 \\ \times \quad 8 \\ \hline \textbf{\$3.84} \end{array}$$

2. (a) $(0.3)(0.4) + (0.3)(0.5) = 0.12 + 0.15$
$= 0.27$

$0.3(0.4 + 0.5) = 0.3(0.9) = 0.27$

$\mathbf{0.27 = 0.27}$

(b) **Distributive property**

3.

	Ratio	Actual Count
Big fish	4	B
Little fish	11	L
Total	15	1320

$$\frac{4}{15} = \frac{B}{1320}$$
$$15B = 5280$$
$$B = \textbf{352 big fish}$$

4. $\dfrac{350 \text{ miles}}{15 \text{ gallons}} = 23.\overline{3}\ \dfrac{\text{miles}}{\text{gallon}}$

$\mathbf{23.3\ \dfrac{miles}{gallon}}$

5. $\dfrac{1}{2} + \dfrac{1}{4} = \dfrac{2}{4} + \dfrac{1}{4} = \dfrac{3}{4}$

$\dfrac{3}{4} \div 2 = \dfrac{3}{4} \times \dfrac{1}{2} = \mathbf{\dfrac{3}{8}}$

6. $\mathbf{1.2 \times 10^{10}}$

7.

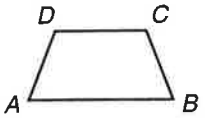
	60 eggs
$\frac{1}{6}$ were cracked.	10 eggs
	10 eggs
$\frac{5}{6}$ were not cracked.	10 eggs
	10 eggs
	10 eggs
	10 eggs

a) **50 eggs**

b) $\dfrac{\text{cracked eggs}}{\text{uncracked eggs}} = \mathbf{\dfrac{1}{5}}$

c) $\dfrac{1}{6} \times 100\% = \mathbf{16\frac{2}{3}\%}$

8. a) One possibility:



b) **Trapezoid**

9. a) Area $= \dfrac{(6 \text{ cm})(4 \text{ cm})}{2} = \mathbf{12 \text{ cm}^2}$

b) Area $= \dfrac{(6 \text{ cm})(4 \text{ cm})}{2} = \mathbf{12 \text{ cm}^2}$

c) Area $= \dfrac{(6 \text{ cm})(4 \text{ cm})}{2} = \mathbf{12 \text{ cm}^2}$

10.
$$\begin{array}{r} 0.76 \\ + \ 0.88 \\ \hline 1.64 \end{array} \qquad 2\overline{)1.64} \quad \mathbf{0.82}$$

11. $\mathbf{W_N = 0.75 \times 64}$
$W_N = \mathbf{48}$

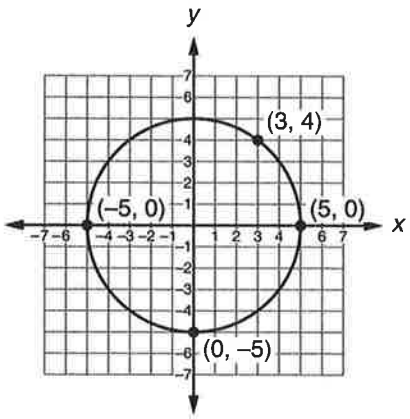
12. $\mathbf{t = 0.08 \times \$7.40}$
$t = \mathbf{\$0.59}$

13. a) $(-3) + (-8) = \mathbf{-11}$

b) $(+3) + (-8) = \mathbf{-5}$

c) $(-3) + (+8) + (-5) = \mathbf{0}$

14.



a) **(5, 0), (−5, 0)**

b) **10 units**

15. $0.95 \text{ liters} \cdot \frac{1000 \text{ milliliters}}{1 \text{ liter}}$
$= 950 \text{ milliliters}$

16. $(5)(0.2) + 5 + \frac{5}{0.2}$
$= 1 + 5 + 25 = 31$

17. **27 blocks**

18. a) $\angle COD$ or $\angle DOC$

b) $\angle AOB$ or $\angle BOA$

19. $20 \times 5 = 100$

20. a) $m\angle A = 180° - (62° + 59°)$
$= 180° - 121° = 59°$

b) $\overline{AB}$ or $\overline{BA}$

c) **Isosceles triangle**

d) **C**

21. a) **Arrange the numbers in order, and look for the middle number. Since there is an even number of scores, there are two middle numbers. So the median is the mean of the two middle numbers.**

b) $16 + 17 = 33$
$33 \div 2 =$ **16.5**

22. a) **False**

b) **True**

23.
$$\begin{array}{r} 2.20 \text{ meters} \\ -\ 2.15 \text{ meters} \\ \hline 0.05 \text{ meters} \end{array} = \textbf{5 centimeters}$$

24. $\frac{10^3 \cdot 10^3}{10^2} = \frac{10^6}{10^2} =$ **10^4 or 10,000**

25.
$$\begin{array}{r} \overset{3}{\cancel{4}} \text{ days } \overset{4}{\cancel{5}} \text{ hr } 15 \text{ min} \\ -\ 1 \text{ day } 7 \text{ hr } 50 \text{ min} \\ \hline \end{array} \longrightarrow$$

(24 hr), (60 min)

$$\begin{array}{r} \overset{3}{\cancel{4}} \text{ days } \overset{28}{\cancel{5}} \text{ hr } \overset{75}{\cancel{15}} \text{ min} \\ -\ 1 \text{ day } \quad 7 \text{ hr } \quad 50 \text{ min} \\ \hline \textbf{2 days 21 hr 25 min} \end{array}$$

26. $4.5 \div (0.4 + 0.5) = 4.5 \div 0.9 =$ **5**

27. $\frac{3 + 0.6}{3 - 0.6} = \frac{3.6}{2.4} =$ **1.5**

28. $1\frac{1}{6} \cdot 3 = \frac{7}{\cancel{6}_2} \cdot \frac{\overset{1}{\cancel{3}}}{1} = \frac{7}{2} = 3\frac{1}{2}$

$4\frac{1}{5} \div 3\frac{1}{2} = \frac{21}{5} \div \frac{7}{2}$

$= \frac{\overset{3}{\cancel{21}}}{5} \times \frac{2}{\underset{1}{\cancel{7}}} = \frac{6}{5} = \mathbf{1\frac{1}{5}}$

29. $3^2 + \sqrt{4 \cdot 7 - 3}$
$= 9 + \sqrt{28 - 3}$
$= 9 + \sqrt{25} = 9 + 5 =$ **14**

30. $|-3| + 4[(5 - 2)(3 + 1)]$
$3 + 4[(3)(4)]$
$3 + 4[12]$
$3 + 48$
51

LESSON 66, LESSON PRACTICE

a. $C = \pi d$
$C \approx 3.14(8 \text{ in.})$
$C \approx$ **25.12 in.**

b. $C = \pi d$
$C \approx \frac{22}{7}(42 \text{ mm})$
$C \approx$ **132 mm**