LESSON 55, LESSON PRACTICE

a. $5(18 \text{ points}) = \mathbf{90 \text{ points}}$

b. $4(45) = 180$

$24 + 36 + 52 + n = 180$

$n = \mathbf{68}$

c. $5(91) = 455$

$6(89) = 534$

$$\begin{array}{r} 534 \\ -\ 455 \\ \hline \mathbf{79} \end{array}$$

LESSON 55, MIXED PRACTICE

1.

	Ratio	Actual Count
Sailboats	7	56
Rowboats	4	R

$\frac{7}{4} = \frac{56}{R}$

$7R = 56 \cdot 4$

$R = \mathbf{32 \text{ rowboats}}$

2. $4(85) = 340$

$76 + 78 + 81 + n = 340$

$n = \mathbf{105}$

3.
$$12\overline{)\$8.64}\quad \begin{array}{r} \$0.72 \\ 84 \\ \hline 24 \\ 24 \\ \hline 0 \end{array}$$

$$\begin{array}{r} \$0.89 \\ -\ \$0.72 \\ \hline \$0.17 \end{array}$$

$0.17 per container

4. $BC - AB = 2\frac{2}{8}\text{ in.} - 1\frac{6}{8}\text{ in.}$

$$2\tfrac{2}{8}\text{ in.} \longrightarrow 1\tfrac{10}{8}\text{ in.}$$

$$-\ 1\tfrac{6}{8}\text{ in.} \qquad -\ 1\tfrac{6}{8}\text{ in.}$$

$$\tfrac{4}{8}\text{ in.} = \mathbf{\tfrac{1}{2}\text{ in.}}$$

5.

$\frac{3}{10}$ earned an A.

$\frac{7}{10}$ did not earn an A.

30 students
3 students
3 students
3 students
3 students
3 students
3 students
3 students
3 students
3 students
3 students

(a) **9 students**

(b) $\frac{3}{10} \times 100\% = \mathbf{30\%}$

6. (a) $6.75000000 \longrightarrow \mathbf{6.75 \times 10^8}$

(b) $186000. \longrightarrow \mathbf{186{,}000}$

7. (a) 10^{10}

(b) 10^6

8. (a) $24 \text{ feet} \cdot \frac{12 \text{ inches}}{1 \text{ foot}} = \mathbf{288 \text{ inches}}$

(b) $\overset{50}{\cancel{500}} \text{ millimeters} \cdot \frac{1 \text{ centimeter}}{\underset{1}{\cancel{10}} \text{ millimeters}}$

$= \mathbf{50 \text{ centimeters}}$

9. $0.02 \cdot 0.025 = \mathbf{0.0005}$

10.
$$\begin{array}{r} \$3.25 \\ +\ \$1.10 \\ \hline \$4.35 \end{array} \qquad \begin{array}{r} \$4.35 \\ \times\ 0.07 \\ \hline \$0.3045 \longrightarrow \$0.30 \end{array}$$

$$\begin{array}{r} \$4.35 \\ +\ \$0.30 \\ \hline \mathbf{\$4.65} \end{array}$$

11. (a) $5\overline{)1.0}$ $\quad \mathbf{0.2}$

(b) $\frac{1}{5} \times 100\% = \frac{100\%}{5} = \mathbf{20\%}$

(c) $0.1 = \mathbf{\frac{1}{10}}$

(d) $0.1 \times 100\% = \mathbf{10\%}$

(e) $75\% = \frac{75}{100} = \mathbf{\frac{3}{4}}$

(f) $75\% = \frac{75}{100} = \mathbf{0.75}$

12. (a) $\overline{AD}$ (or $\overline{DA}$)

(b) $\overline{DC}$ (or $\overline{CD}$) and $\overline{AH}$ (or $\overline{HA}$)

(c) $\angle DAB$ (or $\angle BAD$)

13. (a) Area $= (6\text{ cm})(8\text{ cm}) = \mathbf{48\ cm^2}$

(b) Area $= \dfrac{(4\text{ cm})(8\text{ cm})}{2} = \mathbf{16\ cm^2}$

(c) Area $= 48\text{ cm}^2 + 16\text{ cm}^2 = \mathbf{64\ cm^2}$

14. 6 feet 2 inches $= 6(12\text{ inches}) + 2\text{ inches}$
$= 74\text{ inches}$

$$\begin{array}{r} 74\text{ inches} \\ -\ 68\text{ inches} \\ \hline \mathbf{6\text{ inches}} \end{array}$$

15. (a) $\dfrac{\mathbf{5\text{ laps}}}{\mathbf{4\text{ min}}}; \dfrac{\mathbf{4\text{ min}}}{\mathbf{5\text{ laps}}}$

(b) $\overset{5}{\cancel{20}}\ \cancel{\text{min}} \cdot \dfrac{5\text{ laps}}{\underset{1}{\cancel{4}}\ \cancel{\text{min}}} = \mathbf{25\ laps}$

(c) $\overset{4}{\cancel{20}}\ \cancel{\text{laps}} \cdot \dfrac{4\text{ min}}{\underset{1}{\cancel{5}}\ \cancel{\text{laps}}} = \mathbf{16\ minutes}$

16. $\dfrac{1}{2}\left(\dfrac{1}{4} + \dfrac{1}{2}\right)$ or $\dfrac{1}{2}\left(\dfrac{1}{4} + \dfrac{1}{2}\right)$

$\dfrac{1}{2}\left(\dfrac{3}{4}\right)$ $\qquad$ $\dfrac{1}{8} + \dfrac{1}{4}$

$\mathbf{\dfrac{3}{8}}$ $\qquad$ $\mathbf{\dfrac{3}{8}}$

17. $\dfrac{30}{70} = \dfrac{21}{x}$

$30x = 21 \cdot 70$

$x = \dfrac{1470}{30}$

$x = \mathbf{49}$

18. $25\overline{)10000}$

$\quad\ 400$

$w = \mathbf{400}$

19. $2 + 7 + 5 = \mathbf{14}$

$$\begin{array}{r} 2\frac{5}{12} = 2\frac{10}{24} \\ 6\frac{5}{6} = 6\frac{20}{24} \\ +\ 4\frac{7}{8} = 4\frac{21}{24} \\ \hline 12\frac{51}{24} = 14\frac{3}{24} = \mathbf{14\frac{1}{8}} \end{array}$$

20. $6 - (7 - 5) = 6 - 2 = \mathbf{4}$

$$\begin{array}{r} 7\frac{1}{3} = 7\frac{5}{15} \\ -\ 4\frac{4}{5} = 4\frac{12}{15} \\ \hline \end{array} \longrightarrow \begin{array}{r} 6\frac{20}{15} \\ -\ 4\frac{12}{15} \\ \hline 2\frac{8}{15} \end{array}$$

$$\begin{array}{r} 6 \\ -\ 2\frac{8}{15} \\ \hline \end{array} \longrightarrow \begin{array}{r} 5\frac{15}{15} \\ -\ 2\frac{8}{15} \\ \hline \mathbf{3\frac{7}{15}} \end{array}$$

21. $10\ \cancel{\text{yd}} \cdot \dfrac{36\text{ in.}}{1\ \cancel{\text{yd}}} = \mathbf{360\ in.}$

22.
$$\begin{array}{r} 8\text{ yd }2\text{ ft }7\text{ in.} \\ +\qquad 5\text{ in.} \\ \hline 8\text{ yd }2\text{ ft }12\text{ in.} \end{array}$$

12 in. $=$ 1 ft

2 ft $+$ 1 ft $=$ 3 ft

3 ft $=$ 1 yd

8 yd $+$ 1 yd $=$ 9 yd

9 yd

23. $12^2 - 4^3 - 2^4 - \sqrt{144}$
$= 144 - 64 - 16 - 12 = \mathbf{52}$

24. $50 + 30 \div 5 \cdot 2 - 6$

$50 + 6 \cdot 2 - 6$

$50 + 12 - 6$

$62 - 6$

56

25. $6\frac{2}{3} \cdot 5\frac{1}{4} \cdot 2\frac{1}{10}$

$$= \frac{\overset{1}{\cancel{20}}}{\underset{1}{\cancel{3}}} \cdot \frac{\overset{7}{\cancel{21}}}{\underset{2}{\cancel{4}}} \cdot \frac{21}{\underset{1}{\cancel{10}}} = \frac{147}{2} = \mathbf{73\frac{1}{2}}$$

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

$= \dfrac{10}{3} \div \dfrac{3}{1} \div \dfrac{5}{2}$

$= \left(\dfrac{10}{3} \times \dfrac{1}{3}\right) \div \dfrac{5}{2} = \dfrac{10}{9} \div \dfrac{5}{2}$

$= \dfrac{\overset{2}{\cancel{10}}}{9} \times \dfrac{2}{\underset{1}{\cancel{5}}} = \mathbf{\dfrac{4}{9}}$

27.
$$\begin{array}{r} 6.000 \\ -\ 1.359 \\ \hline 4.641 \end{array} \qquad \begin{array}{r} 3.47 \\ +\ 4.641 \\ \hline \mathbf{8.111} \end{array}$$

28.
$$\begin{array}{r} 0.28 \\ \times\ 0.6 \\ \hline 0.168 \end{array} \qquad \begin{array}{r} 0.168 \\ \times\ 0.01 \\ \hline \mathbf{0.00168} \end{array}$$

29. $75\overline{)\$1500.00}$ = **$20.00**

30. $m\angle a = 180° - (90° + 52°)$
$= 180° - 142° = \mathbf{38°}$
$m\angle b = 90° - 38° = \mathbf{52°}$
$m\angle c = 90° - 52° = \mathbf{38°}$

Lesson 56, Lesson Practice

a.

$\overset{2}{\cancel{3}}$ hr		3 s
− 1 hr	15 min	55 s

(60 min) →

$\overset{2}{\cancel{3}}$ hr	$\overset{59}{\cancel{60}}$ min	$\overset{63}{\cancel{3}}$ s
− 1 hr	15 min	55 s
1 hr	**44 min**	**8 s**

b.

8 yd	$\overset{0}{\cancel{1}}$ ft	5 in.
− 3 yd	2 ft	7 in.

(12 in.) →

$\overset{7}{\cancel{8}}$ yd	$\overset{0}{\cancel{1}}$ ft	$\overset{17}{\cancel{5}}$ in.
− 3 yd	2 ft	7 in.
		10 in.

(3 ft) →

$\overset{7}{\cancel{8}}$ yd	$\overset{3}{\cancel{9}}$ ft	$\overset{17}{\cancel{5}}$ in.
− 3 yd	2 ft	7 in.
4 yd	**1 ft**	**10 in.**

c.

2 days	$\overset{2}{\cancel{3}}$ hr	30 min	
− 1 day	8 hr	45 min	

(60 min) →

(24 hr) →

$\overset{1}{\cancel{2}}$ days	$\overset{2}{\cancel{3}}$ hr	$\overset{90}{\cancel{30}}$ min	
− 1 day	8 hr	45 min	
		45 min	

$\overset{1}{\cancel{2}}$ days	$\overset{26}{\cancel{3}}$ hr	$\overset{90}{\cancel{30}}$ min	
− 1 day	8 hr	45 min	
	18 hr	**45 min**	

Lesson 56, Mixed Practice

1.
$$\begin{array}{r} 0.0329 \\ -\ 0.0320 \\ \hline 0.0009 \end{array}$$
Nine ten-thousandths

2.

	Ratio	Actual Count
Length	4	12 feet
Width	3	W

(a) $\frac{4}{3} = \frac{12 \text{ feet}}{W}$

$4W = 3(12 \text{ feet})$

$W = \mathbf{9 \text{ feet}}$

(b) Perimeter $= 2(12 \text{ feet}) + 2(9 \text{ feet})$
$= 24 \text{ feet} + 18 \text{ feet} = \mathbf{42 \text{ feet}}$

3. $\$2 + \$0.50(4) = \$2 + \$2 = \mathbf{\$4}$

4. $4(85) = 340$

$340 + 90 = 430$

$\frac{430}{5} = \mathbf{86}$

5. $\frac{\$1.50}{12 \text{ ounces}} = \frac{\$0.125}{1 \text{ ounce}}$

$\frac{\$1.92}{16 \text{ ounces}} = \frac{\$0.12}{1 \text{ ounce}}$

Brand X = 12.5¢ per ounce
Brand Y = 12¢ per ounce
Brand Y is the better buy.

6. (a) $\frac{\text{igneous rocks}}{\text{total rocks}} = \frac{3}{8}$

(b) $\frac{\text{igneous rocks}}{\text{metamorphic rocks}} = \frac{3}{5}$

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

7. (a) $\angle QPR$ **and** $\angle TPS$ (or $\angle RPQ$ **and** $\angle SPT$)
$\angle RPS$ **and** $\angle QPT$ (or $\angle SPR$ **and** $\angle TPQ$)

(b) $\angle RPQ$ (or $\angle QPR$) and $\angle SPT$ (or $\angle TPS$)

8. (a) $6{,}10000 \longrightarrow \mathbf{6.1 \times 10^5}$

(b) $15000, \longrightarrow \mathbf{15{,}000}$

9. (a) $\overset{9}{\cancel{216}}\ \cancel{\text{hours}} \cdot \frac{1\ \text{day}}{\overset{1}{\cancel{24}}\ \cancel{\text{hours}}} = \mathbf{9\ days}$

(b) $5\ \cancel{\text{minutes}} \cdot \frac{60\ \text{seconds}}{1\ \cancel{\text{minute}}} = \mathbf{300\ seconds}$

10. (a)
$$\begin{array}{r} 0.166\ldots \\ 6\overline{)1.000\ldots} \\ \underline{6} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 4 \end{array}$$
0.17

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

11. $1{,}000{,}000\ \cancel{\text{dollars}} \cdot \frac{100\ \text{pennies}}{1\ \cancel{\text{dollar}}}$
$= 100{,}000{,}000\ \text{pennies} = \mathbf{1 \times 10^8\ pennies}$

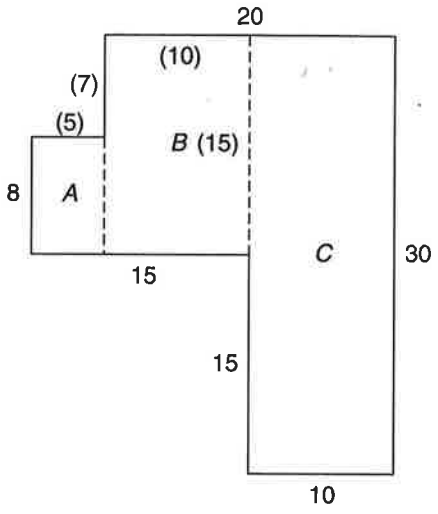
12. $1{,}1000000 \longrightarrow \mathbf{1.1 \times 10^7}$
11 million $> 1.1 \times 10^6$

13. **70**

14. $\frac{100°}{180°} = \frac{10°}{F}$
$F(100°) = (180°)(10°)$
$= \mathbf{18°\ F}$

15. Perimeter $= 20\text{ mm} + 30\text{ mm} + 10\text{ mm} + 15\text{ mm} + 15\text{ mm} + 8\text{ mm} + 5\text{ mm} + 7\text{ mm} = \mathbf{110\ mm}$

16.



Area A = (5 mm)(8 mm) = 40 mm^2
Area B = (10 mm)(15 mm) = 150 mm^2
+ Area C = (30 mm)(10 mm) = 300 mm^2
Area of figure = **490 mm^2**

17. $\frac{3}{2.5} = \frac{48}{c}$
$3c = 48(2.5)$
$c = \frac{120}{3}$
$c = \mathbf{40}$

18. $0.75 + 0.75 = 1.50 = 1.5$
$k = \mathbf{1.5}$

19. $15^2 - 5^3 - \sqrt{100} = 225 - 125 - 10$
$= 100 - 10 = \mathbf{90}$

20. $6 + 12 \div 3 \cdot 2 - 3 \cdot 4$
$6 + 4 \cdot 2 - 12$
$6 + 8 - 12$
$14 - 12$
2

21.
$$\begin{array}{r} 5\text{ yd}\ \ 2\text{ ft}\ \ 3\text{ in.} \\ +\ 2\text{ yd}\ \ 2\text{ ft}\ \ 9\text{ in.} \\ \hline 7\text{ yd}\ \ 4\text{ ft}\ \ 12\text{ in.} \end{array}$$
12 in. = 1 ft
4 ft + 1 ft = 5 ft
5 ft = 1 yd 2 ft
$$\begin{array}{r} 1\text{ yd}\ \ 2\text{ ft} \\ +\ 7\text{ yd} \\ \hline \mathbf{8\text{ yd}\ \ 2\text{ ft}} \end{array}$$

22.

$$\begin{array}{lll} 5\text{ yd} & {}^{1}\cancel{2}\text{ ft} & 3\text{ in.} \\ -\,2\text{ yd} & 2\text{ ft} & 9\text{ in.} \end{array} \longrightarrow (12\text{ in.})$$

$$\begin{array}{lll} {}^{4}\cancel{5}\text{ yd} & {}^{1}\cancel{2}\text{ ft} & {}^{15}\cancel{3}\text{ in.} \\ -\,2\text{ yd} & 2\text{ ft} & 9\text{ in.} \\ \hline & & 6\text{ in.} \end{array} \longrightarrow (3\text{ ft})$$

$$\begin{array}{lll} {}^{4}\cancel{5}\text{ yd} & {}^{4}\cancel{2}\text{ ft} & {}^{15}\cancel{3}\text{ in.} \\ -\,2\text{ yd} & 2\text{ ft} & 9\text{ in.} \\ \hline \mathbf{2\text{ yd}} & \mathbf{2\text{ ft}} & \mathbf{6\text{ in.}} \end{array}$$

23. $\frac{88\text{ km}}{1\cancel{\text{hr}}} \cdot 4\,\cancel{\text{hr}} = \mathbf{352\text{ km}}$

24.

$$5\tfrac{1}{6} = 5\tfrac{2}{12} \longrightarrow 4\tfrac{14}{12}$$
$$-\,1\tfrac{1}{4} = 1\tfrac{3}{12} \qquad -\,1\tfrac{3}{12}$$
$$3\tfrac{11}{12}$$

$$2\tfrac{3}{4} = 2\tfrac{9}{12}$$
$$+\,3\tfrac{11}{12} = 3\tfrac{11}{12}$$
$$5\tfrac{20}{12} = 6\tfrac{8}{12} = \mathbf{6\tfrac{2}{3}}$$

25.

$$3\tfrac{3}{4} \cdot 2\tfrac{1}{2} \div 3\tfrac{1}{8}$$
$$= \left(\frac{15}{4} \cdot \frac{5}{2}\right) \div \frac{25}{8}$$
$$= \frac{75}{8} \div \frac{25}{8} = \frac{{}^{3}\cancel{75}}{\cancel{8}_{1}} \times \frac{{}^{1}\cancel{8}}{\cancel{25}_{1}} = \mathbf{3}$$

26.

$$3\tfrac{3}{4} \div 2\tfrac{1}{2} \cdot 3\tfrac{1}{8}$$
$$= \left(\frac{15}{4} \div \frac{5}{2}\right) \cdot \frac{25}{8} = \left(\frac{{}^{3}\cancel{15}}{\cancel{4}_{2}} \times \frac{{}^{1}\cancel{2}}{\cancel{5}_{1}}\right) \cdot \frac{25}{8}$$
$$= \frac{3}{2} \cdot \frac{25}{8} = \frac{75}{16} = \mathbf{4\tfrac{11}{16}}$$

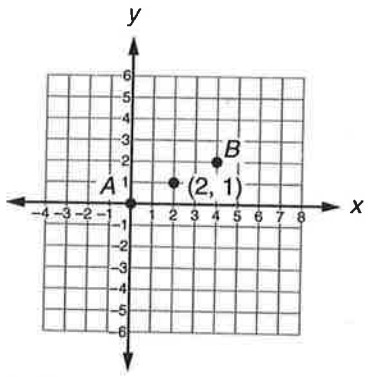
27. **The first five numbers in the sequence are the squares of the first five counting numbers. So the 99th number in the sequence is 99^2.**

28. **See student work. If the triangle is drawn and measured accurately, the longest side is twice the length of the shortest side.**

29.

$$0.5\text{ meter} = 50\text{ centimeters}$$
$$\text{radius} = \frac{50\text{ centimeters}}{2}$$
$$= \mathbf{25\text{ centimeters}}$$

30.



(2, 1)

LESSON 57, LESSON PRACTICE

a. $5^{-2} = \frac{1}{5^2} = \mathbf{\frac{1}{25}}$

b. $3^0 = \mathbf{1}$

c. $10^{-4} = \frac{1}{10^4} = \mathbf{\frac{1}{10{,}000}}$ **or 0.0001**

d. $0.0000002,5 \longrightarrow \mathbf{2.5 \times 10^{-7}}$

e. $0.000000001 \longrightarrow \mathbf{1 \times 10^{-9}}$

f. $0.0001,05 \longrightarrow \mathbf{1.05 \times 10^{-4}}$

g. $.00000045 \longrightarrow \mathbf{0.00000045}$

h. $.001 \longrightarrow \mathbf{0.001}$

i. $.0000125 \longrightarrow \mathbf{0.0000125}$

j. $1 \times 10^{-3} = 0.001$
$1 \times 10^{2} = 100$
$1 \times 10^{-3} < 1 \times 10^{2}$

k. $2.5 \times 10^{-2} = 0.025$
$2.5 \times 10^{-3} = 0.0025$
$2.5 \times 10^{-2} > 2.5 \times 10^{-3}$

LESSON 57, MIXED PRACTICE

1.

	Ratio	Actual Count
Walkers	**5**	**315**
Riders	**3**	R

$\frac{5}{3} = \frac{315}{R}$
$5R = 3(315)$
$R =$ **189 riders**

2. $5(88) = 440$
$6(90) = 540$
$540 - 440 =$ **100**

3. $2(\$34.95) + \$0.18(300)$
$= \$69.90 + \$54.00$
$=$ **\$123.90**

4. 1 quart = 2 pints
\$0.26 per pint
$2\overline{)\$0.52}$
4
12
12
0

5.

	1 hour
finished in $\frac{2}{5}$	12 minutes
	12 minutes
	12 minutes
	12 minutes
	12 minutes

(a) **24 minutes**

(b) $\frac{2}{5} \times 100\% = \frac{200\%}{5} =$ **40%**

6. (a) $1.86000 \longrightarrow$ **1.86×10^5**

(b) $.000004 \longrightarrow$ **4×10^{-5}**

7. (a) $32.5 \longrightarrow$ **32.5**

(b) $.0000015 \longrightarrow$ **0.0000015**

8. (a) $2^{-3} = \frac{1}{2^3} = \frac{1}{8}$

(b) $5^0 =$ **1**

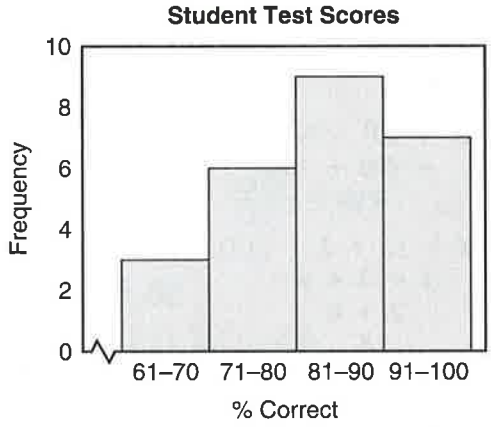
(c) $10^{-2} = \frac{1}{10^2} = \frac{1}{100}$ **or 0.01**

9. $\frac{2000 \text{ milliliters}}{} \cdot \frac{1 \text{ liter}}{1000 \text{ milliliters}}$
$=$ **2 liters**

10. $\frac{2}{6} = \frac{1}{3}$

11.
$$\begin{array}{r} \$13.75 \\ 24\overline{)\$330.00} \\ 24 \\ \hline 90 \\ 72 \\ \hline 180 \\ 160 \\ \hline 120 \\ 120 \\ \hline 0 \end{array}$$

12.



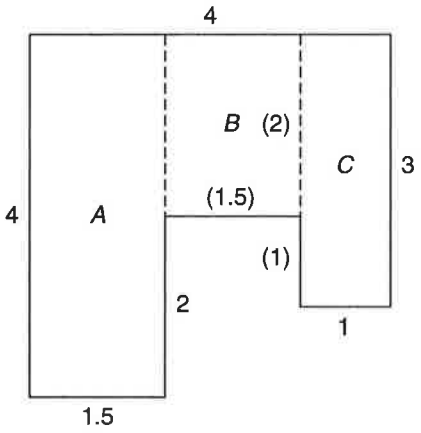
13. (a) $2.5 \times 10^{-2} = 0.025$
$2.5 \div 10^2 = \frac{2.5}{100} = 0.025$
$2.5 \times 10^{-2} = 2.5 \div 10^2$

(b) $1 \times 10^{-6} = 0.000001$
one millionth $= 1 \times 10^{-6}$

(c) $3^0 = 1, 2^0 = 1$
$3^0 = 2^0$

14. Perimeter = 4 yd + 3 yd + 1 yd
+ 1 yd + 1.5 yd + 2 yd
+ 1.5 yd + 4 yd = **18 yd**

15.



Area A = (1.5 yd)(4 yd) = 6 yd^2
Area B = (1.5 yd)(2 yd) = 3 yd^2
+ Area C = (1 yd)(3 yd) = 3 yd^2
Area of figure = **12 yd^2**

16. $4(5)(0.5) = 20(0.5) = \mathbf{10}$

17. $\$20.00 \div 4 = \mathbf{\$5.00}$

18. $y = 3(12) + 5 = 36 + 5 = \mathbf{41}$

19. $20^2 + 10^3 - \sqrt{36}$
$= 400 + 1000 - 6 = \mathbf{1394}$

20. $48 \div 12 \div 2 + 2(3)$
$4 \div 2 + 6$
$2 + 6$
8

21.

3 yd 2 ft 1 in. (12 in.) →
− 1 yd 2 ft 3 in. →

2 yd 1 ft 13 in. (3 ft) →
− 1 yd 2 ft 3 in. →
10 in.

2 yd 4 ft 13 in.
− 1 yd 2 ft 3 in.
1 yd 2 ft 10 in.

22.

4 gal 3 qt 1 pt 6 oz
+ 1 gal 2 qt 1 pt 5 oz
5 gal 5 qt 2 pt 11 oz

2 pt = 1 qt
1 qt 11 oz
+ 5 qt
6 qt 11 oz

6 qt = 1 gal 2 qt
1 gal 2 qt 11 oz
+ 5 gal
6 gal 2 qt 11 oz

23. $\frac{^{3}\cancel{48}\ \cancel{oz}}{} \cdot \frac{1\text{ pt}}{\cancel{16}\ \cancel{oz}_{1}} = \mathbf{3\text{ pt}}$

24. $7 \div 1\frac{3}{4} = \frac{7}{1} \div \frac{7}{4} =$
$\frac{\cancel{7}^{1}}{1} \times \frac{4}{\cancel{7}_{1}} = 4$
$5\frac{1}{3} \cdot 4 = \frac{16}{3} \cdot \frac{4}{1} = \frac{64}{3} = \mathbf{21\frac{1}{3}}$

25.

$5\frac{1}{6} = 5\frac{4}{24}$
$3\frac{5}{8} = 3\frac{15}{24}$
$+\ 2\frac{7}{12} = 2\frac{14}{24}$
$10\frac{33}{24} = 11\frac{9}{24} = \mathbf{11\frac{3}{8}}$

26.

$\frac{1}{20} = \frac{9}{180}$
$-\ \frac{1}{36} = \frac{5}{180}$
$\frac{4}{180} = \mathbf{\frac{1}{45}}$

27. $4.6 \times 10^{-2} = 0.046$
0.46
+ 0.046
0.506

28.

2.300 10.000
− 0.575 − 1.725
1.725 **8.275**

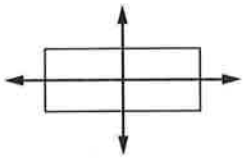
29.
$$\begin{array}{r} 0.24 \\ \times\ 0.15 \\ \hline 1\,20 \\ 2\,4 \\ \hline 0.03\,60 \end{array} = 0.036$$

$$\begin{array}{r} 0.036 \\ \times\ \ 0.05 \\ \hline 0.00180 \end{array} = \mathbf{0.0018}$$

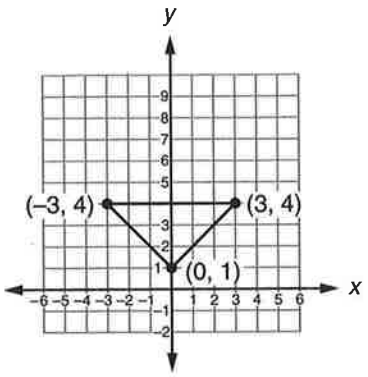
30. $0.002\overline{)0.140}$ $\quad$ $\mathbf{5000}\overline{)10000}$

Lesson 58, Lesson Practice

a.



b.



(−3, 4)

c. $7(5) = \mathbf{35}$

d. $1 + (4) = \mathbf{5}$

Lesson 58, Mixed Practice

1. $10(1.4 \text{ kilometers}) = \mathbf{14 \text{ kilometers}}$

2. $5(\$0.75) = \mathbf{\$3.75}$

3. $17n = 340$

$$n = \frac{340}{17}$$

$$n = 20$$

$$\begin{array}{r} 17 \\ +\ 20 \\ \hline \mathbf{37} \end{array}$$

4. (a) $\dfrac{\text{won}}{\text{lost}} = \dfrac{3}{9} = \mathbf{\dfrac{1}{3}}$

(b) $\dfrac{\text{lost}}{\text{total games}} = \dfrac{9}{12} = \mathbf{\dfrac{3}{4}}$

(c) $\dfrac{1}{4} \times 100\% = \dfrac{100\%}{4} = \mathbf{25\%}$

5. $5(120) = 600$

$$\begin{array}{r} 600 \\ 118 \\ 124 \\ +\ 142 \\ \hline 984 \end{array} = \text{total score for 8 games}$$

Average score = **123**

$$\begin{array}{r} \mathbf{123} \\ 8\overline{)984} \\ \underline{8} \\ 18 \\ \underline{16} \\ 24 \\ \underline{24} \\ 0 \end{array}$$

6.

	60 questions
$\frac{3}{5}$ were multiple-choice.	12 questions
	12 questions
	12 questions
$\frac{2}{5}$ were not multiple-choice	12 questions
	12 questions

(a) **36 questions**

(b) $\dfrac{2}{5} \times 100\% = \dfrac{200\%}{5} = \mathbf{40\%}$

7. (a) $\overline{OA}, \overline{OB}, \overline{OC}$

(b) $\overline{AC}$ (or $\overline{CA}$), $\overline{BC}$ (or $\overline{CB}$)

(c) **60°**

(d) **30°**

8. (a) $15000000. \longrightarrow$ **15,000,000**

(b) $.00025 \longrightarrow$ **0.00025**

(c) $10^{-1} = \mathbf{\dfrac{1}{10}}$ **or 0.1**

9. 20 qt = 5 gal

10.
$$\begin{array}{r} 19.16\ldots \\ 18\overline{)345.00\ldots} \\ \underline{18} \\ 165 \\ \underline{162} \\ 30 \\ \underline{18} \\ 120 \\ \underline{108} \\ 12 \end{array}$$

19

11. **5, 0, −5**

12. (a) $6\overline{)1.000\ldots}$ $\quad 0.1\overline{6}\ldots$ **$0.1\overline{6}$**

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

(c) $16\% = \frac{16}{100} = \mathbf{\frac{4}{25}}$

(d) $16\% = \frac{16}{100} = \mathbf{0.16}$

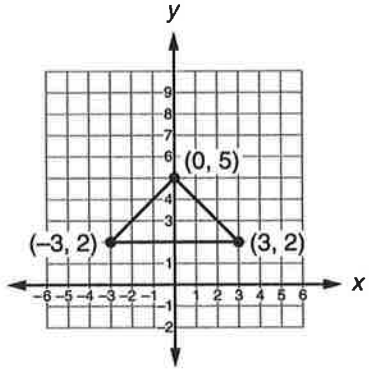
13. $2(4) = \mathbf{8}$

14. (a) $m\angle ACB = 180° - (90° + 35°)$
$= 180° - 125° = \mathbf{55°}$

(b) $\angle ACD = 180° - 55° = \mathbf{125°}$

(c) $\angle CAD = 180° - (35° + 125°)$
$= 180° - 160° = \mathbf{20°}$

15.



(a) **(3, 2)**

(b) Area $= \frac{(6 \text{ units})(3 \text{ units})}{2}$
$= \mathbf{9 \text{ units}^2}$

16. **5 lines**

17. (a) $\overset{7}{\cancel{210}}\ \cancel{\text{miles}} \cdot \frac{1 \text{ hr}}{\underset{2}{\cancel{60}}\ \cancel{\text{miles}}}$

$= \frac{7}{2}\text{ hr} = \mathbf{3\frac{1}{2}\text{ hr}}$

(b) $\overset{3}{\cancel{210}}\ \cancel{\text{miles}} \cdot \frac{1 \text{ hr}}{\underset{1}{\cancel{70}}\ \cancel{\text{miles}}}$

$= \mathbf{3 \text{ hr}}$

18. $\frac{1.5}{2} = \frac{7.5}{w}$

$1.5w = 2(7.5)$

$w = \frac{15}{1.5}$

$w = \mathbf{10}$

19.
$$\begin{array}{r} 1.70 \\ -\ 0.17 \\ \hline 1.53 \end{array}$$

$y = \mathbf{1.53}$

20. $10^3 - 10^2 + 10^1 - 10^0$

$1000 - 100 + 10 - 1$

$900 + 10 - 1$

$910 - 1$

909

21. $6 + 3(2) - 4 - (5 + 3)$

$6 + 6 - 4 - 8$

$12 - 4 - 8$

$8 - 8$

0

22.
$$\begin{array}{r} 1\text{ gal}\ \ 2\text{ qt}\ \ 1\text{ pt} \\ +\ 1\text{ gal}\ \ 2\text{ qt}\ \ 1\text{ pt} \\ \hline 2\text{ gal}\ \ 4\text{ qt}\ \ 2\text{ pt} \end{array}$$

2 pt = 1 qt

4 qt + 1 qt = 5 qt

5 qt = 1 gal 1 qt

$$\begin{array}{r} 1\text{ gal}\ \ 1\text{ qt} \\ +\ 2\text{ gal} \\ \hline \mathbf{3\text{ gal}\ \ 1\text{ qt}} \end{array}$$

23.

$$\begin{array}{rrr} & \overset{2}{\cancel{3}}\text{ hr} & 15\text{ min} \\ - & 8\text{ hr} & 30\text{ min} \end{array} \longrightarrow \text{(60 min)}$$

$$\begin{array}{rrr} \overset{0}{\cancel{1}}\text{ day} & \overset{2}{\cancel{3}}\text{ hr} & \overset{75}{\cancel{15}}\text{ min} \\ - & 8\text{ hr} & 30\text{ min} \end{array} \longrightarrow \text{(24 hr)}$$

$$45\text{ min}$$

$$\begin{array}{rrr} \overset{0}{\cancel{1}}\text{ day} & \overset{26}{\cancel{2}}\text{ hr} & \overset{75}{\cancel{15}}\text{ min} \\ - & 8\text{ hr} & 30\text{ min} \end{array}$$

$$\mathbf{18\text{ hr}\quad 45\text{ min}}$$

24. $2\ \cancel{\text{mi}} \cdot \dfrac{5280\text{ ft}}{1\ \cancel{\text{mi}}} = \mathbf{10{,}560\text{ ft}}$

25.

$$\begin{array}{r} 5\frac{3}{4} = 5\frac{9}{12} \\ -\ 1\frac{5}{6} = 1\frac{10}{12} \\ \hline \end{array} \longrightarrow \begin{array}{r} 4\frac{21}{12} \\ -\ 1\frac{10}{12} \\ \hline 3\frac{11}{12} \end{array}$$

$$\begin{array}{r} 10 \\ -\ 3\frac{11}{12} \\ \hline \end{array} \longrightarrow \begin{array}{r} 9\frac{12}{12} \\ -\ 3\frac{11}{12} \\ \hline \mathbf{6\frac{1}{12}} \end{array}$$

26.

$$\begin{array}{r} 2\frac{1}{5} = 2\frac{2}{10} \\ +\ 5\frac{1}{2} = 5\frac{5}{10} \\ \hline 7\frac{7}{10} \end{array}$$

$$7\frac{7}{10} \div 2\frac{1}{5} = \frac{77}{10} \div \frac{11}{5}$$

$$= \frac{\overset{7}{\cancel{77}}}{\underset{2}{\cancel{10}}} \times \frac{\overset{1}{\cancel{5}}}{\underset{1}{\cancel{11}}} = \frac{7}{2} = \mathbf{3\frac{1}{2}}$$

27. $6 \div 4\frac{1}{2} = \frac{6}{1} \div \frac{9}{2} =$

$$\frac{\overset{2}{\cancel{6}}}{1} \times \frac{2}{\underset{3}{\cancel{9}}} = \frac{4}{3}$$

$$3\frac{3}{4} \cdot \frac{4}{3} = \frac{\overset{5}{\cancel{15}}}{\underset{1}{\cancel{4}}} \cdot \frac{\overset{1}{\cancel{4}}}{\underset{1}{\cancel{3}}} = \mathbf{5}$$

28. $(6)^2 - 4(3.6)(2.5)$

$= 36 - 36 = \mathbf{0}$

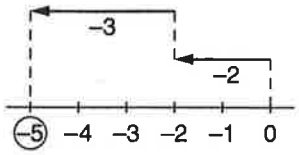
29. (a) **2.5, 2,** $\frac{3}{2}$**, 0,** $-\frac{1}{2}$**,** -1

(b) $-1, 0, 2$

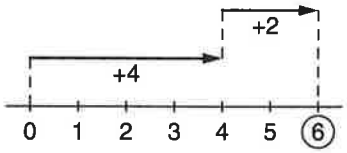
30. Lindsey could double both numbers before dividing, forming the equivalent division problem 70 ÷ 5. She could also double both of these numbers to form 140 ÷ 10.

LESSON 59, LESSON PRACTICE

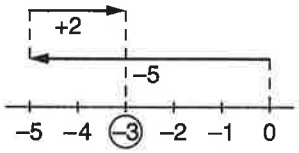
a.



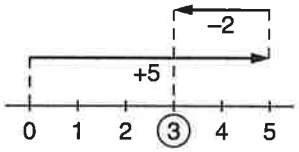
b.



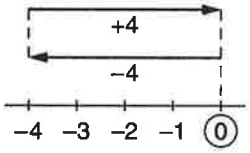
c.



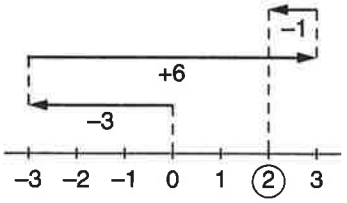
d.



e.



f.

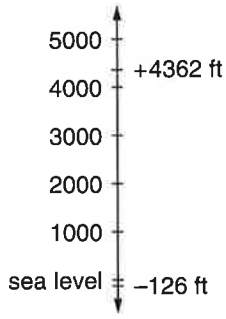


g. $|-3| + |3| = 3 + 3 = \mathbf{6}$

h. $|3 - 3| = |0| = \mathbf{0}$

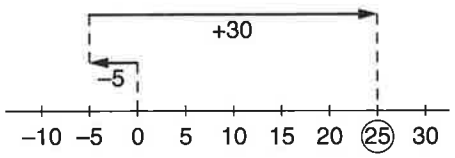
i. $|5 - 3| = |2| = \mathbf{2}$

j.



$$\begin{array}{r} 4362 \text{ ft} \\ +\ 126 \text{ ft} \\ \hline \mathbf{4488 \text{ ft}} \end{array}$$

k.



$30

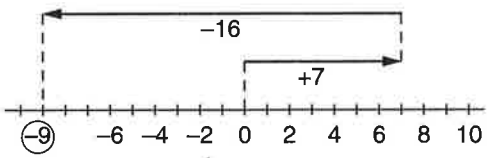
LESSON 59, MIXED PRACTICE

1. $2(\$2.35) + \$0.60(6)$
$= \$4.70 + \$3.60$
$= \mathbf{\$8.30}$

2.
$$\begin{array}{r} 90°\text{F} \\ -\ 85°\text{F} \\ \hline \mathbf{5°\text{F}} \end{array}$$

3.
$$\begin{array}{r} 82°\text{F} \\ 84°\text{F} \\ 86°\text{F} \\ 88°\text{F} \\ 84°\text{F} \\ 90°\text{F} \\ +\ 88°\text{F} \\ \hline 602°\text{F} \end{array} \qquad \begin{array}{r} \mathbf{86°\text{F}} \\ 7\overline{)602°\text{F}} \end{array}$$

4.



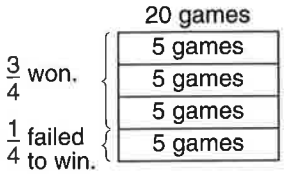
16°F

5.

	Ratio	Actual Count
Sonorous voices	7	S
Discordant voices	4	56

$$\frac{7}{4} = \frac{S}{56}$$
$$4S = 7(56)$$
$$S = \mathbf{98 \text{ voices}}$$

6.



(a) **15 games**

(b) $\frac{1}{4} \times 100\% = \frac{100\%}{4} = \mathbf{25\%}$

7. $|-3| = 3, |3| = 3$
$3 = 3$
$|-3| = |3|$

8. (a) $4{,}000000000000 \longrightarrow \mathbf{4 \times 10^{12}}$

(b) 3670000000, miles $\longrightarrow$
3,670,000,000 miles

9. (a) $,000001$ meter $\longrightarrow$ **0.000001 meter**

(b) 1 millimeter $= 0.001$ meter
1×10^{-3} meter $= 0.001$ meter
1 millimeter $= 1 \times 10^{-3}$ meter

10. $\overset{3}{\cancel{300}}\ \cancel{\text{mm}} \cdot \frac{1 \text{ m}}{\underset{10}{\cancel{1000}}\ \cancel{\text{mm}}} = \frac{3}{10} \text{ m} = \mathbf{0.3 \text{ m}}$

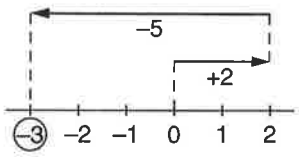
11. (a) $12\% = \frac{12}{100} = \mathbf{\frac{3}{25}}$

(b) $12\% = \frac{12}{100} = \mathbf{0.12}$

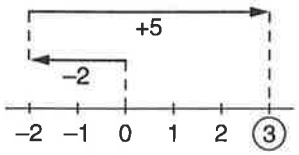
(c) $3\overline{)1.00\ldots}$ $\quad 0.33\ldots$ $\quad \mathbf{0.\overline{3}}$

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

12. (a)



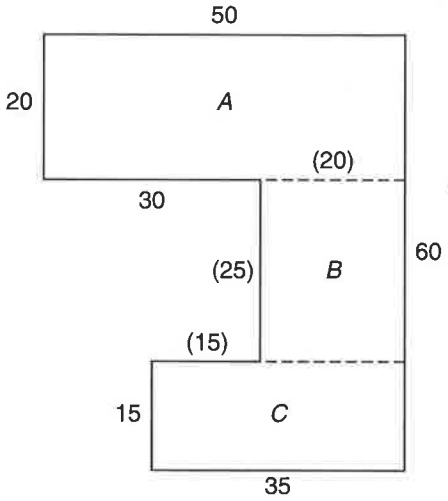
(b)



13. $8 + (12) = \mathbf{20}$

14. Perimeter $= 50\text{ mm} + 60\text{ mm} + 35\text{ mm} + 15\text{ mm} + 15\text{ mm} + 25\text{ mm} + 30\text{ mm} + 20\text{ mm}$
$= \mathbf{250\text{ mm}}$

15.



Area $A = (50\text{ mm})(20\text{ mm}) = 1000\text{ mm}^2$
Area $B = (20\text{ mm})(25\text{ mm}) = 500\text{ mm}^2$
$+$ Area $C = (35\text{ mm})(15\text{ mm}) = 525\text{ mm}^2$
Area of figure $= \mathbf{2025\text{ mm}^2}$

16.
$$8\overline{)4.40}\quad 0.55$$
$w = \mathbf{0.55}$

17. $\frac{0.8}{1} = \frac{x}{1.5}$
$1x = (0.8)(1.5)$
$x = \mathbf{1.2}$

18. $\frac{17}{30} = \frac{34}{60}$
$-\ \frac{11}{20} = \frac{33}{60}$
$n = \mathbf{\frac{1}{60}}$

19.
$$7\overline{)0.364}\quad 0.052$$
$$\begin{array}{r} 35 \\ \hline 14 \\ 14 \\ \hline 0 \end{array}$$
$m = \mathbf{0.052}$

20. $2^{-1} + 2^{-1} = \frac{1}{2} + \frac{1}{2}$
$= \frac{2}{2} = \mathbf{1}$

21. $\sqrt{64} - 2^3 + 4^0 = 8 - 8 + 1$
$= \mathbf{1}$

22.
$$\begin{array}{rrrr} & 3\text{ yd} & 2\text{ ft} & 7\frac{1}{2}\text{ in.} \\ + & 1\text{ yd} & & 5\frac{1}{2}\text{ in.} \\ \hline & 4\text{ yd} & 2\text{ ft} & 13\text{ in.} \end{array}$$
13 in. $=$ 1 ft 1 in.
1 ft 1 in.
2 ft
3 ft 1 in.
3 ft $=$ 1 yd, 4 yd $+$ 1 yd $=$ 5 yd
5 yd 1 in.

23.
$$\begin{array}{rrrr} & {\scriptstyle 0}\not{1}\text{ qt} & 1\text{ pt} & 6\text{ oz} \\ - & & 1\text{ pt} & 12\text{ oz} \\ \hline \end{array} \longrightarrow$$
(2 pt)

$$\begin{array}{rrrr} & {\scriptstyle 0}\not{1}\text{ qt} & {\scriptstyle 2}\not{3}\text{ pt} & 6\text{ oz} \\ - & & 1\text{ pt} & 12\text{ oz} \\ \hline \end{array} \longrightarrow$$
(16 oz)

$$\begin{array}{rrrr} & {\scriptstyle 0}\not{1}\text{ qt} & {\scriptstyle 2}\not{3}\text{ pt} & {\scriptstyle 22}\not{6}\text{ oz} \\ - & & 1\text{ pt} & 12\text{ oz} \\ \hline & & \mathbf{1\text{ pt}} & \mathbf{10\text{ oz}} \end{array}$$

24. $2\frac{1}{2}\not{\text{hr}} \cdot \frac{50\text{ mi}}{1\not{\text{hr}}} = \mathbf{125\text{ mi}}$

25. $\frac{5}{9} \cdot 12 = \frac{5}{\not{9}_3} \cdot \frac{\overset{4}{\not{12}}}{1} = \frac{20}{3}$

$\frac{20}{3} \div 6\frac{2}{3} = \frac{20}{3} \div \frac{20}{3}$
$= \frac{\overset{1}{\not{20}}}{\not{3}_1} \times \frac{\overset{1}{\not{3}}}{\not{20}_1} = \mathbf{1}$

26. $4 - (4 - 1) = 4 - 3 = \mathbf{1}$

$$4 \longrightarrow 3\frac{9}{9}$$

$$\begin{array}{r} -\ 1\frac{1}{9} \\ \hline \end{array} \qquad \begin{array}{r} -\ 1\frac{1}{9} \\ \hline 2\frac{8}{9} \end{array}$$

$$3\frac{5}{6} = 3\frac{15}{18} \longrightarrow 2\frac{33}{18}$$

$$\begin{array}{r} -\ 2\frac{8}{9} = 2\frac{16}{18} \\ \hline \end{array} \qquad \begin{array}{r} -\ 2\frac{16}{18} \\ \hline \mathbf{\frac{17}{18}} \end{array}$$

27. $(6 + 6) \div 6 = 12 \div 6 = \mathbf{2}$

$$\begin{array}{r} 5\frac{5}{8} = 5\frac{5}{8} \\ +\ 6\frac{1}{4} = 6\frac{2}{8} \\ \hline 11\frac{7}{8} \end{array}$$

$$11\frac{7}{8} \div 6\frac{1}{4} = \frac{95}{8} \div \frac{25}{4}$$

$$= \frac{\overset{19}{\cancel{95}}}{\underset{2}{\cancel{8}}} \times \frac{\overset{1}{\cancel{4}}}{\underset{5}{\cancel{25}}} = \frac{19}{10} = \mathbf{1\frac{9}{10}}$$

28. $(0.1) - (0.2)(0.3)$

$= 0.1 - 0.06 = \mathbf{0.04}$

29.
$$\begin{array}{r} \$18.00 \\ \times\ 0.065 \\ \hline 9000 \\ 10800 \\ \hline \$1.17000 \end{array} = \mathbf{\$1.17}$$

30. $\dfrac{\text{candidate with most votes}}{\text{total votes}} = \dfrac{10}{25}$

$= \mathbf{\frac{2}{5}}$

Lesson 60, Lesson Practice

a. $W_N = \mathbf{\frac{4}{5}} \times \mathbf{71}$

$W_N = \frac{284}{5}$

$W_N = \mathbf{56\frac{4}{5}}$

b. $\mathbf{\frac{3}{8}} \times \mathbf{3\frac{3}{7}} = \boldsymbol{W_N}$

$\frac{3}{\underset{1}{\cancel{8}}} \times \frac{\overset{3}{\cancel{24}}}{7} = W_N$

$\frac{9}{7} = \mathbf{1\frac{2}{7}} = W_N$

c. $\boldsymbol{W_N = 0.6 \times 145}$

$W_N = \mathbf{87}$

d. $\mathbf{0.75 \times 14.4} = \boldsymbol{W_N}$

$\mathbf{10.8} = W_N$

e. $\boldsymbol{W_N = 0.5 \times 150}$

$W_N = \mathbf{75}$

f. $\mathbf{0.03 \times \$39} = \boldsymbol{M}$

$\mathbf{\$1.17} = M$

g. $\boldsymbol{W_N = 0.25 \times 64}$

$W_N = \mathbf{16}$

h. $\mathbf{0.12 \times \$250{,}000} = \boldsymbol{C}$

$\mathbf{\$30{,}000} = C$

Lesson 60, Mixed Practice

1.
$$\begin{array}{r} 7.0021 \\ -\ 5.7840 \\ \hline \mathbf{1.2181} \end{array}$$

2. $\frac{\overset{100}{\cancel{\$20}}}{} \cdot \frac{1 \text{ board}}{\underset{1}{\cancel{\$0.20}}} = \mathbf{100 \text{ boards}}$

3. $\frac{72}{n} = 12$

$n = 6$

$72 \times 6 = \mathbf{432}$

4. (a) $\frac{1}{5} \times 100\% = \mathbf{20\%}$

(b) $\dfrac{\text{students who passed}}{\text{students who did not pass}} = \mathbf{\frac{4}{1}}$

5. $5(77 \text{ inches}) = 385 \text{ inches}$

$$\begin{array}{r} 71 \text{ inches} \\ 74 \text{ inches} \\ 78 \text{ inches} \\ +\ 78 \text{ inches} \\ \hline 301 \text{ inches} \end{array} \qquad \begin{array}{r} 385 \text{ inches} \\ -\ 301 \text{ inches} \\ \hline \textbf{84 inches} \end{array}$$

6. (a) $\mathbf{8 \times 10^{-8}}$

(b) $\mathbf{6.75 \times 10^{10}}$

7.

96 members

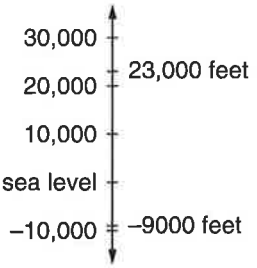
$\frac{2}{3}$ approved: 32 members, 32 members

$\frac{1}{3}$ did not approve: 32 members

(a) **64 members**

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

8.



$$\begin{array}{r} 23{,}000 \text{ feet} \\ +\ 9000 \text{ feet} \\ \hline \textbf{32,000 feet} \end{array}$$

9. $W_N = \frac{3}{4} \times 17$

$W_N = \frac{51}{4}$

$W_N = \mathbf{12\frac{3}{4}}$

10. $0.4 \times \$65 = P$

$\mathbf{\$26} = P$

11. (a) $3\overline{)1.00\ldots}$ $0.33\ldots$ $\qquad \frac{1}{3} > 0.33$

(b) $|5 - 3| = |2| = 2$

$|3 - 5| = |-2| = 2$

$|5 - 3| = |3 - 5|$

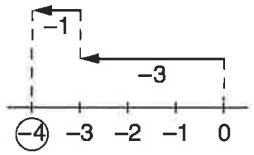
12. (a) $8\overline{)1.000}$ $\mathbf{0.125}$

(b) $\frac{1}{8} \times 100\% = \mathbf{12\frac{1}{2}\%}$

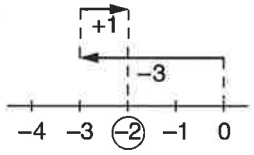
(c) $125\% = \frac{125}{100} = \mathbf{1\frac{1}{4}}$

(d) $125\% = \frac{125}{100} = \mathbf{1.25}$

13. (a)



(b)



14. (a) $\mathbf{2^4 \cdot 3^2 \cdot 5^2}$

(b) $\sqrt{3600} = 60 = \mathbf{2^2 \cdot 3 \cdot 5}$

15. (a) $360° \times \frac{1}{2} = \frac{360°}{2} = \mathbf{180°}$

(b) $360° \times \frac{1}{3} = \frac{360°}{3} = \mathbf{120°}$

(c) $360° \times \frac{1}{6} = \frac{360°}{6} = \mathbf{60°}$

16. (a) ΔCDB

(b) ΔCEA

17. (a) $\text{Area} = \frac{(6 \text{ ft})(8 \text{ ft})}{2} = \mathbf{24 \text{ ft}^2}$

(b) $\text{Area} = \frac{(12 \text{ ft})(16 \text{ ft})}{2} = \mathbf{96 \text{ ft}^2}$

18. $\text{Area}(\Delta DEF) = \frac{(6 \text{ ft})(8 \text{ ft})}{2} = 24 \text{ ft}^2$

$96 \text{ ft}^2 - 24 \text{ ft}^2 - 24 \text{ ft}^2 = \mathbf{48 \text{ ft}^2}$

19.
$$\frac{1}{20} = \frac{3}{60}$$
$$+\ \frac{1}{30} = \frac{2}{60}$$
$$\frac{5}{60} = \frac{1}{12}$$
$$p = \mathbf{\frac{1}{12}}$$

20.
$$9\overline{)0.117}$$
$$\begin{array}{r} 0.013 \\ 9\overline{)0.117} \\ \underline{9} \\ 27 \\ \underline{27} \\ 0 \end{array}$$
$$m = \mathbf{0.013}$$

21. $3^2 + 4(3 + 2) - 2^3 \cdot 2^{-2} + \sqrt{36}$

$9 + 4(3 + 2) - 8 \cdot \frac{1}{4} + 6$

$9 + 4(5) - 2 + 6$

$9 + 20 - 2 + 6$

$29 - 2 + 6$

$27 + 6$

$\mathbf{33}$

22.
$$\begin{array}{rrr} 3 \text{ days} & 16 \text{ hr} & 48 \text{ min} \\ +\ 1 \text{ day} & 15 \text{ hr} & 54 \text{ min} \\ \hline 4 \text{ days} & 31 \text{ hr} & 102 \text{ min} \end{array}$$

102 min = 1 hr 42 min

$$\begin{array}{rr} 1 \text{ hr} & 42 \text{ min} \\ +\ 31 \text{ hr} & \\ \hline 32 \text{ hr} & 42 \text{ min} \end{array}$$

32 hr = 1 day 8 hr

$$\begin{array}{rrr} 1 \text{ day} & 8 \text{ hr} & 42 \text{ min} \\ +\ 4 \text{ days} & & \\ \hline \mathbf{5 \text{ days}} & \mathbf{8 \text{ hr}} & \mathbf{42 \text{ min}} \end{array}$$

23.
$$19\frac{3}{4} = 19\frac{18}{24}$$
$$27\frac{7}{8} = 27\frac{21}{24}$$
$$+\ 24\frac{5}{6} = 24\frac{20}{24}$$
$$70\frac{59}{24} = \mathbf{72\frac{11}{24}}$$

24.
$$\frac{5}{6} \cdot 4 = \frac{5}{\cancel{6}_{3}} \cdot \frac{\overset{2}{\cancel{4}}}{1} = \frac{10}{3} = 3\frac{1}{3}$$
$$3\frac{3}{5} = 3\frac{9}{15}$$
$$-\ 3\frac{1}{3} = 3\frac{5}{15}$$
$$\mathbf{\frac{4}{15}}$$

25.
$$1\frac{1}{4} \div \frac{5}{12} = \frac{5}{4} \div \frac{5}{12}$$
$$= \frac{\overset{1}{\cancel{5}}}{\underset{1}{\cancel{4}}} \times \frac{\overset{3}{\cancel{12}}}{\underset{1}{\cancel{5}}} = 3$$
$$3 \div 24 = \frac{3}{24} = \mathbf{\frac{1}{8}} \text{ or } \mathbf{0.125}$$

26.
$$\begin{array}{r} 0.650 \\ -\ 0.065 \\ \hline 0.585 \end{array} \qquad \begin{array}{r} 6.500 \\ -\ 0.585 \\ \hline \mathbf{5.915} \end{array}$$

27. $3 \div 0.03 = 100$

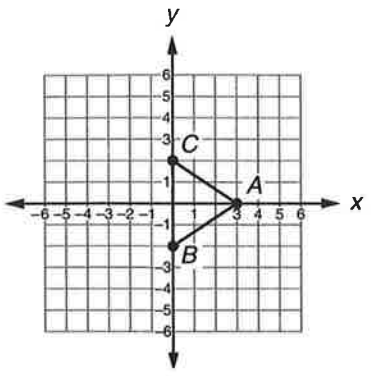
$0.3 \div 100 = \mathbf{0.003}$

28. $3.5 \cancel{\text{centimeters}} \cdot \frac{1 \text{ meter}}{100 \cancel{\text{centimeters}}}$

$= \frac{3.5}{100} \text{ meter} = \mathbf{0.035 \text{ meter}}$

29. **The first division problem can be multiplied by $\frac{100}{100}$ to form the second division problem. Since $\frac{100}{100}$ equals 1, the quotients are the same. One possibility: $\frac{\$1.50}{\$0.25} = \frac{150¢}{25¢}$**

30.



(0, 2)