b.

40 clowns

$\frac{5}{8}$ had happy faces.	5 clowns, 5 clowns, 5 clowns, 5 clowns, 5 clowns
$\frac{3}{8}$ did not have happy faces (15).	5 clowns, 5 clowns, 5 clowns

$15 \div 3 = 5$

5×8 clowns $=$ **40 clowns**

c.

16 questions

$\frac{3}{4}$ had been answered (12).	4 questions, 4 questions, 4 questions
$\frac{1}{4}$ will be answered.	4 questions

$12 \div 3 = 4$

4×4 questions $=$ **16 questions**

LESSON 71, MIXED PRACTICE

1. $9 \cancel{\text{seconds}} \cdot \frac{331 \text{ meters}}{1 \cancel{\text{second}}}$

$=$ 2979 meters; **about 3 kilometers**

2.

$$\begin{array}{r} 3.33 \\ 3.45 \\ +\ 3.51 \\ \hline 10.29 \end{array} \qquad 3\overline{)10.29} \quad \mathbf{3.43}$$

3. $2(80 \text{ percent}) + 3(90 \text{ percent}) = 430 \text{ percent}$

$\frac{430 \text{ percent}}{5} =$ **86 percent**

4.

$$\begin{array}{r} 20{,}000{,}000{,}000 \\ -\ 9{,}000{,}000{,}000 \\ \hline 11{,}000{,}000{,}000 \end{array}$$

$\mathbf{1.1 \times 10^{10}}$

5.

$$\begin{array}{r} 2 \\ 3 \\ 5 \\ 7 \\ +\ 11 \\ \hline \mathbf{28} \end{array}$$

6.

	Ratio	Actual Count
New ones	4	N
Used ones	7	U
Total	11	242

$\frac{4}{11} = \frac{N}{242}$

$11N = 968$

$N =$ **88 new ones**

7.

130 pages

$\frac{3}{5}$ read (78)	26 pages, 26 pages, 26 pages
$\frac{2}{5}$ not read	26 pages, 26 pages

(a) $78 \div 3 = 26$

$5 \times 26 =$ **130 pages**

(b) $2 \times 26 =$ **52 pages**

8. (4 1-inch cubes)(4 1-inch cubes) $=$ 16 1-inch cubes

$\frac{16 \text{ 1-inch cubes}}{1 \cancel{\text{layer}}} \cdot 4 \cancel{\text{layers}}$

$=$ **64 1-inch cubes**

9. $(4 \text{ in.})(4 \text{ in.}) = 16 \text{ in.}^2$

$6(16 \text{ in.}^2) =$ **96 in.^{2}**

10. (a) $C \approx 3.14(28 \text{ cm})$

$C \approx$ **87.92 cm**

(b) $C \approx \frac{22}{7}(28 \text{ cm})$

$C \approx$ **88 cm**

11. (a) $\mathbf{2.5 \times 10^{7}}$

(b) $\mathbf{2.5 \times 10^{-5}}$

12. (a) $0.1 = \mathbf{\frac{1}{10}}$

(b) $0.1 = \frac{1}{10} = \frac{10}{100} =$ **10%**

(c) $0.5\% = \frac{0.5}{100} = \mathbf{\frac{1}{200}}$

(d) $0.5\% = \frac{0.5}{100} =$ **0.005**

13. (a) $W_N = 0.35 \times 80$

$W_N = 28$

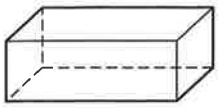
(b) $\frac{\cancel{3}}{\cancel{4}_1} \times \frac{\cancel{24}^{6}}{1} = W_N$

$3(6) = W_N$

$18 = W_N$

14. **Add 7 to the "in" number to find the "out" number.** $0 + 7 = 7$

15.



8 vertices

16. (a) Perimeter $= 10\text{ cm} + 12\text{ cm} + 8\text{ cm} + 6\text{ cm} =$ **36 cm**

(b) Area $= \frac{(6\text{ cm})(8\text{ cm})}{2} =$ **24 cm²**

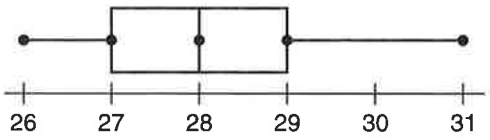
(c) Area $= \frac{(12\text{ cm})(8\text{ cm})}{2} =$ **48 cm²**

(d) Area $= 24\text{ cm}^2 + 48\text{ cm}^2 =$ **72 cm²**

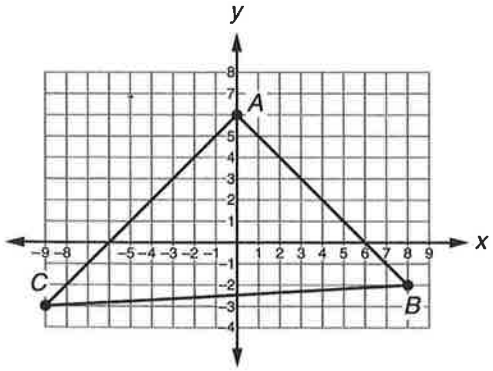
17.
$$\begin{array}{r} \$16.50 \\ \times \quad 0.15 \\ \hline \$2.475 \end{array}$$

About $2.50

18.



19.



m∠A = 90°
m∠B = 48°
m∠C = 42°

20. $(0.01) - (0.1)(0.01)$

$= 0.01 - 0.001 =$ **0.009**

21. $m + 5.75 = 26.4$

$m + 5.75 - 5.75 = 26.4 - 5.75$

$m =$ **20.65**

check: $20.65 + 5.75 = 26.4$

$26.4 = 26.4$

22. $\frac{3}{4}x = 48$

$\left(\frac{\cancel{4}^{1}}{\cancel{3}_1}\right)\frac{\cancel{3}^{1}}{\cancel{4}_1}x = \left(\frac{4}{\cancel{3}_1}\right)\cancel{48}^{16}$

$x =$ **64**

check: $\frac{3}{\cancel{4}_1}(\cancel{64}^{16}) = 48$

$3(16) = 48$

$48 = 48$

23. **Rhombus**

24.
$$\frac{4^2 + \{20 - 2[6 - (5 - 2)]\}}{\sqrt{36}}$$
$$\frac{16 + \{20 - 2[6 - (3)]\}}{6}$$
$$\frac{16 + \{20 - 2[3]\}}{6}$$
$$\frac{16 + \{20 - 6\}}{6}$$
$$\frac{16 + \{14\}}{6}$$
$$\frac{30}{6}$$
$$\mathbf{5}$$

25.
$$\begin{array}{r} \overset{0}{\cancel{1}}\text{ yd } \overset{2}{(\cancel{3}\text{ ft})}\ (12\text{ in.}) \\ - \quad 1\text{ ft} \quad 1\text{ in.} \\ \hline \textbf{1 ft} \quad \textbf{11 in.} \end{array}$$

26. $3.5\ \cancel{\text{hr}} \cdot \frac{60\ \cancel{\text{min}}}{1\ \cancel{\text{hr}}} \cdot \frac{60\text{ s}}{1\ \cancel{\text{min}}} =$ **12,600 s**

27. $4\frac{1}{2} \cdot 2\frac{2}{3} = \frac{\overset{3}{\cancel{9}}}{\cancel{2}_1} \cdot \frac{\overset{4}{\cancel{8}}}{\cancel{3}_1} = 12$

$6\frac{2}{3} \div 12 = \frac{20}{3} \div \frac{12}{1}$

$= \frac{\overset{5}{\cancel{20}}}{3} \times \frac{1}{\cancel{12}_3} = \frac{5}{9}$

28.
$$7\frac{1}{2} = 7\frac{3}{6}$$
$$-\ 5\frac{1}{6} = 5\frac{1}{6}$$
$$2\frac{2}{6} = 2\frac{1}{3}$$

$$2\frac{1}{3}$$
$$+\ 1\frac{1}{3}$$
$$\mathbf{3\frac{2}{3}}$$

29. (a) $(-5) + (-6) - |-7|$
$(-5) + (-6) + [-|-7|]$
$(-5) + (-6) + [-7]$
-18

(b) $(-15) - (-24) - (+8)$
$(-15) + [-(-24)] + [-(+8)]$
$(-15) + [24] + [-8]$
1

30.
$$1.5 = 1\frac{1}{2}$$
$$2\frac{2}{3} = 2\frac{4}{6}$$
$$-\ 1\frac{1}{2} = 1\frac{3}{6}$$
$$\mathbf{1\frac{1}{6}}$$

LESSON 72, LESSON PRACTICE

a. Between 4 and 6 hours

	Case 1	Case 2
km	30	75
Hours	2	h

$$\frac{30}{2} = \frac{75}{h}$$
$$30h = 2(75)$$
$$30h = 150$$
$$h = \frac{\overset{5}{\cancel{150}}}{\underset{1}{\cancel{30}}}$$
$$h = \mathbf{5\ hours}$$

b. $\frac{\overset{5}{\cancel{50}}\ \text{head}}{} \cdot \frac{\overset{3}{\cancel{6}}\ \text{bales}}{\underset{2}{\cancel{40}}\ \text{head}}$

$$= \frac{15\ \text{bales}}{2} = \mathbf{7\frac{1}{2}\ bales}$$

	Case 1	Case 2
Head of cattle	40	50
Bales	6	b

$$\frac{40}{6} = \frac{50}{b}$$
$$40b = 6(50)$$
$$40b = 300$$
$$b = \frac{\overset{15}{\cancel{300}}}{\underset{2}{\cancel{40}}}$$
$$b = \frac{15}{2}\ \text{bales} = \mathbf{7\frac{1}{2}\ bales}$$

c.

	Case 1	Case 2
First number	5	9
Second number	15	n

$$\frac{5}{15} = \frac{9}{n}$$
$$5n = 15(9)$$
$$5n = 135$$
$$n = \frac{\overset{27}{\cancel{135}}}{\underset{1}{\cancel{5}}}$$
$$n = \mathbf{27}$$

LESSON 72, MIXED PRACTICE

1.
$$1821$$
$$-\ 1769$$
$$\mathbf{52\ years}$$

2. $4(4\ \text{points}) + 6(9\ \text{points})$
$= 16\ \text{points} + 54\ \text{points}$
$= 70\ \text{points}$

$$\frac{70\ \text{points}}{10} = \mathbf{7\ points}$$

3. $\mathbf{2.5\ \cancel{liters} \cdot \frac{1000\ milliliters}{1\ \cancel{liter}}}$
$= \mathbf{2500\ milliliters}$

4. $\left(\frac{1}{2}+\frac{2}{5}\right)-\left(\frac{1}{2}\cdot\frac{2}{5}\right)$

$=\left(\frac{5}{10}+\frac{4}{10}\right)-\left(\frac{1}{5}\right)$

$=\frac{9}{10}-\frac{1}{5}=\frac{9}{10}-\frac{2}{10}=\mathbf{\frac{7}{10}}$

5.

	Ratio	Actual Count
Carnivores	2	126
Herbivores	7	H

$\frac{2}{7}=\frac{126}{H}$

$2H = 882$

$H =$ **441 herbivores**

6.

	Case 1	Case 2
Books	4	14
Pounds	9	P

$\frac{4}{9}=\frac{14}{p}$

$4p = 9(14)$

$4p = 126$

$p=\frac{\overset{63}{\cancel{126}}}{\underset{2}{\cancel{4}}}$

$p =$ **$31\frac{1}{2}$ pounds**

7. (a) $\frac{\overset{1}{\cancel{2}}}{\underset{1}{\cancel{5}}}\times\frac{\overset{12}{\cancel{60}}}{1}=W_N$

$$\mathbf{24} = W_N$$

(b) $M = \mathbf{0.75 \times \$24}$

$M =$ **\$18**

8. $C \approx 3.14\,(20\text{ in.})$

$C \approx 62.8\text{ in.} \approx$ **63 in.**

9.

	225 voters
$\frac{2}{3}$ for Kayla (150)	75 voters
	75 voters
$\frac{1}{3}$ not for Kayla	75 voters

(a) $\frac{150\text{ votes}}{2} = 75\text{ votes}$

$3(75\text{ votes}) =$ **225 votes**

(b) $1(75\text{ votes}) =$ **75 votes**

10. (10 ice cubes)(8 ice cubes)

$=$ 80 ice cubes

$\frac{80\text{ ice cubes}}{1\ \cancel{\text{layer}}}\cdot 6\ \cancel{\text{layers}}$

$=$ **480 ice cubes**

11. $(10\text{ in.})(8\text{ in.}) = 80\text{ in.}^2$

$(6\text{ in.})(10\text{ in.}) = 60\text{ in.}^2$

$(6\text{ in.})(8\text{ in.}) = 48\text{ in.}^2$

$2(80\text{ in.}^2) + 2(60\text{ in.}^2) + 2(48\text{ in.}^2)$

$= 160\text{ in.}^2 + 120\text{ in.}^2 + 96\text{ in.}^2$

$=$ **376 in.^{2}**

12. (a) $\mathbf{6 \times 10^5}$

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

13.

$$\begin{array}{r} 1.35 \\ 1.44 \\ +\ 1.59 \\ \hline 4.38 \end{array} \qquad 3\overline{)4.38}\ \mathbf{1.46}$$

14. (a) $3\overline{)5.0}\ \mathbf{0.6}$

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

(c) $2.5\% = \frac{2.5}{100} = \mathbf{\frac{1}{40}}$

(d) $2.5\% = \frac{2.5}{100} =$ **0.025**

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

(b) **90**

16. (a) Area $= (8\text{ in.})(6\text{ in.}) =$ **48 in.^{2}**

(b) Area $= \frac{(8\text{ in.})(6\text{ in.})}{2} =$ **24 in.^{2}**

(c) $180° - 72° =$ **108°**

17. (a) **Sphere**

(b) **Triangular prism**

(c) **Cylinder**

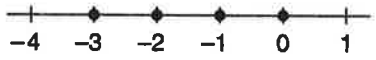
Only the triangular prism is a polyhedron, because it is the only figure whose faces are polygons.

18. (a) $C = \pi(60\text{ mm})$
$C = \mathbf{60\pi\text{ mm}}$

(b) $C \approx 3.14(60\text{ mm})$
$C \approx \mathbf{188.4\text{ mm}}$

19. $\frac{2}{3} \Circled{<} 0.667$

20.



21. (a) $(5)^2 - (4)^2 = 25 - 16 = \mathbf{9}$

(b) $(5)^0 - (4)^{-1} = 1 - \frac{1}{4}$

$= \frac{4}{4} - \frac{1}{4} = \mathbf{\frac{3}{4}}$

22. $m - \frac{2}{3} = 1\frac{3}{4}$

$m - \frac{2}{3} + \frac{2}{3} = 1\frac{3}{4} + \frac{2}{3}$

$m = 1\frac{9}{12} + \frac{8}{12}$

$m = 1\frac{17}{12} = \mathbf{2\frac{5}{12}}$

check: $2\frac{5}{12} - \frac{2}{3} = 1\frac{3}{4}$

$2\frac{5}{12} - \frac{8}{12} = 1\frac{3}{4}$

$1\frac{17}{12} - \frac{8}{12} = 1\frac{3}{4}$

$1\frac{9}{12} = 1\frac{3}{4}$

$1\frac{3}{4} = 1\frac{3}{4}$

23. $\frac{2}{3}w = 24$

$\left(\frac{\overset{1}{\cancel{3}}}{\underset{1}{\cancel{2}}}\right)\frac{\overset{1}{\cancel{2}}}{\underset{1}{\cancel{3}}}w = \left(\frac{3}{\underset{1}{\cancel{2}}}\right)\overset{12}{\cancel{24}}$

$w = 3(12)$

$w = \mathbf{36}$

check: $\left(\frac{2}{\underset{1}{\cancel{3}}}\right)\overset{12}{\cancel{36}} = 24$

$2(12) = 24$

$24 = 24$

24. $\dfrac{[30 - 4(5 - 2)] + 5(3^3 - 5^2)}{\sqrt{9} + \sqrt{16}}$

$\dfrac{[30 - 12] + 5(27 - 25)}{3 + 4}$

$\dfrac{18 + 5(2)}{7}$

$\dfrac{18 + 10}{7}$

$\dfrac{28}{7}$

$\mathbf{4}$

25.

$\overset{1}{\cancel{2}}$ gal	1 qt	(4 qt) →
− 1 gal	1 qt	1 pt
$\overset{1}{\cancel{2}}$ gal	$\overset{4}{\cancel{5}}$ qt	(2 pt) →
− 1 gal	1 qt	1 pt
$\overset{1}{\cancel{2}}$ gal	$\overset{4}{\cancel{5}}$ qt	2 pt
− 1 gal	1 qt	1 pt
	3 qt	**1 pt**

26. $\frac{1}{\underset{1}{\cancel{2}}}\cancel{\text{mi}} \cdot \frac{\overset{880}{\cancel{1760}}\cancel{\text{ft}}}{1\cancel{\text{mi}}} \cdot \frac{1\text{ yd}}{\underset{1}{\cancel{3}}\cancel{\text{ft}}}$

$= \mathbf{880\text{ yd}}$

27. $4\frac{1}{2} \cdot 6\frac{2}{3} = \frac{\overset{3}{\cancel{9}}}{\underset{1}{\cancel{2}}} \cdot \frac{\overset{10}{\cancel{20}}}{\underset{1}{\cancel{3}}} = 30$

$\left(2\frac{1}{2}\right)^2 \div 30 = \left(\frac{5}{2}\right)^2 \div 30$

$= \frac{25}{4} \div \frac{30}{1} = \frac{\overset{5}{\cancel{25}}}{4} \times \frac{1}{\underset{6}{\cancel{30}}}$

$= \mathbf{\frac{5}{24}}$

28.

$$\begin{array}{r} 5\frac{1}{6} = 5\frac{1}{6} \\ +\ 1\frac{1}{3} = 1\frac{2}{6} \\ \hline 6\frac{3}{6} = 6\frac{1}{2} \end{array}$$

$$\begin{array}{r} 7\frac{1}{2} \\ -\ 6\frac{1}{2} \\ \hline \mathbf{1} \end{array}$$

29. (a) $(-7) + |+5| + (-9)$
$= (-7) + 5 + (-9) = \mathbf{-11}$

(b) $(16) + (-24) - (-18)$
$(16) + (-24) + [-(-18)]$
$(16) + (-24) + [18]$
10

30. $5\frac{1}{4} = 5.25$

$$\begin{array}{r} 5.25 \\ +\ 1.9 \\ \hline \mathbf{7.15} \end{array}$$

LESSON 73, LESSON PRACTICE

a. $(-7)(3) = \mathbf{-21}$

b. $(+4)(-8) = \mathbf{-32}$

c. $(8)(+5) = \mathbf{40}$

d. $(-8)(-3) = \mathbf{24}$

e. $\frac{25}{-5} = \mathbf{-5}$

f. $\frac{-27}{-3} = \mathbf{9}$

g. $\frac{-28}{4} = \mathbf{-7}$

h. $\frac{+30}{6} = \mathbf{5}$

i. $\frac{+45}{-3} = \mathbf{-15}$

LESSON 73, MIXED PRACTICE

1.

	Case 1	Case 2
Packages	12	p
Minutes	5	60

$\frac{12}{5} = \frac{p}{60}$
$5p = 12(60)$
$p = \frac{720}{5}$
$p = \mathbf{144\ packages}$

2. $5(30\text{ minutes}) + 3(46\text{ minutes})$
$= 150\text{ minutes} + 138\text{ minutes}$
$= 288\text{ minutes}$
$\frac{288\text{ minutes}}{8} = \mathbf{36\ minutes}$

3. $\frac{(0.2 + 0.5)}{(0.2)(0.5)} = \frac{0.7}{0.1} = \mathbf{7}$

4. $23\ \cancel{\text{cm}} \cdot \frac{10\text{ mm}}{1\ \cancel{\text{cm}}} = \mathbf{230\ mm}$

5.

	Ratio	Actual Count
Paperback books	3	P
Hardback books	11	9240
Total	14	T

$\frac{11}{14} = \frac{9240}{T}$
$11T = 14(9240)$
$T = \frac{129{,}360}{11}$
$T = \mathbf{11{,}760\ books}$

6. (a) $\mathbf{2.4 \times 10^{-4}}$

(b) $\mathbf{2.4 \times 10^{8}}$

7.

120 questions

$\frac{1}{4}$ were true-false.	30 questions
	30 questions
$\frac{3}{4}$ were not true-false.	30 questions
	30 questions

(a) $4(30\text{ questions}) = \mathbf{120\ questions}$

(b) $3(30\text{ questions}) = \mathbf{90\ questions}$

8. (a) $\frac{5}{\cancel{9}_{1}} \times \cancel{45}^{5} = W_N$

$25 = W_N$

(b) $W_N = \mathbf{0.8 \times 760}$
$W_N = \mathbf{608}$

9. (a) $\frac{-36}{9} = \mathbf{-4}$

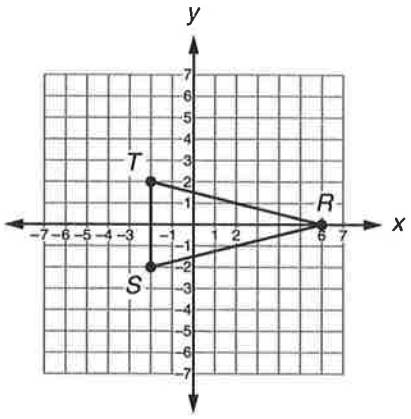
(b) $\frac{-36}{-6} = \mathbf{6}$

(c) $9(-3) = \mathbf{-27}$

(d) $(+8)(+7) = \mathbf{56}$

10. $\frac{\text{composite numbers}}{\text{total numbers}} = \mathbf{\frac{3}{8}}$

11.



(a) **(−2, 2)**

(b) **Isosceles triangle**

(c) $m\angle S = \dfrac{180° - 28°}{2} = \mathbf{76°}$

12. **If the signs of the two factors are the same—both positive or both negative—then the product is positive. If the signs of the two factors are different, the product is negative.**

13. (4 1-ft cubes)(3 1-ft cubes)
= 12 1-ft cubes

$$\frac{12 \text{ 1-ft cubes}}{1 \cancel{\text{layer}}} \cdot 8 \cancel{\text{layers}}$$

$$= \mathbf{96\ 1\text{-ft cubes}}$$

14. (a) $C \approx 3.14(42 \text{ m})$

$C \approx \mathbf{131.88 \text{ m}}$

(b) $C \approx \dfrac{22}{7}(42 \text{ m})$

$C \approx \mathbf{132 \text{ m}}$

15. (a) $2.5 = 2\dfrac{5}{10} = \mathbf{2\dfrac{1}{2}}$

(b) $2.5 \times 100\% = \mathbf{250\%}$

(c) $0.2\% = \dfrac{0.2}{100} = \mathbf{\dfrac{1}{500}}$

(d) $0.2\% = \dfrac{0.2}{100} = \mathbf{0.002}$

16. **Right; scalene**

$$\text{Area} = \frac{(6 \text{ cm})(8 \text{ cm})}{2} = \mathbf{24 \text{ cm}^2}$$

17. **Obtuse; scalene**

$$\text{Area} = \frac{(4 \text{ cm})(5 \text{ cm})}{2} = \mathbf{10 \text{ cm}^2}$$

18. **Acute; isosceles**

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

19. (a) **Pyramid**

(b) **Cylinder**

(c) **Cone**

20. $\dfrac{2}{3} \times 96 = 64$

$\dfrac{5}{6} \times 84 = 70$

$64 < 70$

$\dfrac{2}{3}$ of 96 $\lessdot$ $\dfrac{5}{6}$ of 84

21. $\left(\dfrac{5}{6}\right)\left(\dfrac{3}{4}\right) - \left(\dfrac{5}{6} - \dfrac{3}{4}\right)$

$= \dfrac{5}{8} - \left(\dfrac{10}{12} - \dfrac{9}{12}\right) = \dfrac{5}{8} - \dfrac{1}{12}$

$= \dfrac{15}{24} - \dfrac{2}{24} = \mathbf{\dfrac{13}{24}}$

22. $\dfrac{3}{5}w = 15$

$$\left(\frac{\cancel{5}^{1}}{\cancel{3}_{1}}\right)\left(\frac{\cancel{3}^{1}}{\cancel{5}_{1}}\right)w = \left(\frac{\cancel{5}^{1}}{\cancel{3}_{1}}\right)\cancel{15}^{5}$$

$w = 5(5)$

$w = \mathbf{25}$

check: $\dfrac{\cancel{3}^{1}}{\cancel{3}_{1}}(\cancel{25}^{5}) = 15$

$3(5) = 15$

$15 = 15$

23. $b - 1.6 = (0.4)^2$

$b - 1.6 + 1.6 = (0.4)^2 + 1.6$

$b = 0.16 + 1.6$

$b = \mathbf{1.76}$

check: $1.76 - 1.6 = (0.4)^2$

$0.16 = 0.16$

24. $\overset{1}{\cancel{20}}w = 5.6$

$\dfrac{\overset{1}{\cancel{20}}w}{\cancel{20}_{1}} = \dfrac{5.6}{20}$

$w = \mathbf{0.28}$

check: $20(0.28) = 5.6$

$5.6 = 5.6$

25.
$$\begin{array}{r} 2\text{ yd}\quad 1\text{ ft}\quad 7\text{ in.} \\ +\ 1\text{ yd}\quad 2\text{ ft}\quad 8\text{ in.} \\ \hline 3\text{ yd}\quad 3\text{ ft}\quad 15\text{ in.} \end{array}$$

$15\text{ in.} = 1\text{ ft}\quad 3\text{ in.}$

$$\begin{array}{r} 1\text{ ft}\quad 3\text{ in.} \\ +\ 3\text{ ft} \\ \hline 4\text{ ft}\quad 3\text{ in.} \end{array}$$

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

$$\begin{array}{r} 1\text{ yd}\quad 1\text{ ft}\quad 3\text{ in.} \\ +\ 3\text{ yd} \\ \hline \mathbf{4\text{ yd}\quad 1\text{ ft}\quad 3\text{ in.}} \end{array}$$

26. $0.5 \cancel{\text{m}} \cdot \frac{100\ \cancel{\text{cm}}}{1\ \cancel{\text{m}}} \cdot \frac{10\text{ mm}}{1\ \cancel{\text{cm}}} = \mathbf{500\text{ mm}}$

27. $12\frac{1}{2} \cdot 4\frac{1}{5} \cdot 2\frac{2}{3} = \frac{\cancel{25}^{5}}{\cancel{2}_{1}} \cdot \frac{\cancel{21}^{7}}{\cancel{5}_{1}} \cdot \frac{\cancel{8}^{4}}{\cancel{3}_{1}} = \mathbf{140}$

28. $6\frac{2}{3} \cdot 1\frac{1}{5} = \frac{\cancel{20}^{4}}{\cancel{3}_{1}} \cdot \frac{\cancel{6}^{2}}{\cancel{5}_{1}} = 8$

$$7\frac{1}{2} \div 8 = \frac{15}{2} \div \frac{8}{1} = \frac{15}{2} \times \frac{1}{8}$$
$$= \mathbf{\frac{15}{16}}$$

29. (a) $(-8) + (-7) - (-15)$
$(-8) + (-7) + [-(-15)]$
$(-8) + (-7) + [15]$
$\mathbf{0}$

(b) $(-15) + (+11) - |+24|$
$(-15) + (+11) + [-|+24|]$
$(-15) + (+11) + [-24]$
$\mathbf{-28}$

30. $2.25 = 2\frac{1}{4}$

$$2\frac{1}{4} \times 1\frac{1}{3} = \frac{\cancel{9}^{3}}{\cancel{4}_{1}} \times \frac{\cancel{4}^{1}}{\cancel{3}_{1}} = \mathbf{3}$$

LESSON 74, LESSON PRACTICE

a. $\mathbf{W_F \times 130 = 80}$

$$\frac{W_F \times 130}{130} = \frac{80}{130}$$
$$W_F = \mathbf{\frac{8}{13}}$$

b. $\mathbf{75 = W_D \times 300}$

$$\frac{75}{300} = \frac{W_D \times 300}{300}$$
$$\mathbf{0.25} = W_D$$

c. $\mathbf{80 = 0.4 \times W_N}$

$$\frac{80}{0.4} = \frac{0.4 \times W_N}{0.4}$$
$$\mathbf{200} = W_N$$

d. $\mathbf{60 = \frac{5}{6} \times W_N}$

$$\frac{6}{5} \times 60 = \frac{6}{5} \times \frac{5}{6} \times W_N$$
$$6(12) = W_N$$
$$\mathbf{72} = W_N$$

e. $\mathbf{60 = W_F \times 90}$

$$\frac{60}{90} = \frac{W_F \times 90}{90}$$
$$\mathbf{\frac{2}{3}} = W_F$$

f. $\mathbf{W_D \times 80 = 60}$

$$\frac{W_D \times 80}{80} = \frac{60}{80}$$
$$W_D = \mathbf{0.75}$$

g. $\mathbf{40 = 0.08 \times W_N}$

$$\frac{40}{0.08} = \frac{0.08 \times W_N}{0.08}$$
$$\mathbf{500} = W_N$$

h. $\mathbf{\frac{6}{5} \times W_N = 60}$

$$\frac{5}{6} \times \frac{6}{5} \times W_N = \frac{5}{6} \times 60$$
$$W_N = 5(10)$$
$$W_N = \mathbf{50}$$

LESSON 74, MIXED PRACTICE

1. $3(28\text{ pages}) + 4(42\text{ pages})$
$= 84\text{ pages} + 168\text{ pages}$
$= 252\text{ pages}$

$$\frac{252\text{ pages}}{7} = \mathbf{36\text{ pages}}$$

2. $\frac{\$1.14}{12 \text{ ounces}} = \frac{\$0.095}{1 \text{ ounce}}$

$\frac{\$1.28}{16 \text{ ounces}} = \frac{\$0.08}{1 \text{ ounce}}$

$$\begin{array}{r} \$0.095 \\ -\ \$0.08 \\ \hline \$0.015 \end{array}$$

1.5¢ per ounce

3. $4\frac{1}{2}\ \cancel{\text{feet}} \cdot \frac{12 \text{ inches}}{1\ \cancel{\text{foot}}} = \mathbf{54 \text{ inches}}$

4.

	Ratio	Actual Count
Left-handed students	2	L
Right-handed students	3	18
Total	5	T

$\frac{3}{5} = \frac{18}{T}$

$3T = 90$

$T = \mathbf{30 \text{ students}}$

5.

	Case 1	Case 2
Pounds	5	8
Cost	\$1.40	C

$\frac{5}{\$1.40} = \frac{8}{C}$

$5C = (\$1.40)(8)$

$C = \frac{\$11.20}{5}$

$C = \mathbf{\$2.24}$

6.

300 triathletes

$\frac{5}{6}$ completed the course.

50 triathletes
50 triathletes
50 triathletes
50 triathletes
50 triathletes
50 triathletes

$\frac{1}{6}$ did not complete the course.

(a) **250 triathletes**

(b) $\frac{\text{completed the course}}{\text{did not complete the course}} = \frac{5}{1}$

7. $15 = \frac{3}{8} \times W_N$

$\frac{8}{3} \times 15 = \frac{8}{3} \times \frac{3}{8} \times W_N$

$8(5) = W_N$

$\mathbf{40} = W_N$

8. $\mathbf{70 = W_D \times 200}$

$\frac{70}{200} = \frac{W_D \times 200}{200}$

$\mathbf{0.35} = W_D$

9. $\mathbf{\frac{2}{5} \times W_N = 120}$

$\frac{5}{2} \times \frac{2}{5} \times W_N = \frac{5}{2} \times 120$

$W_N = 5(60)$

$W_N = \mathbf{300}$

10. $\mathbf{P = 0.6 \times \$180}$

$P = \mathbf{\$108}$

11. $\mathbf{W_N = 0.2 \times \$35}$

$W_N = \mathbf{\$7}$

12. (a) $(3 \text{ in.})(3 \text{ in.}) = 9 \text{ in.}^2$

$\frac{9 \text{ in.}^2}{1\ \cancel{\text{layer}}} \cdot (1 \text{ in.})(3\ \cancel{\text{layers}})$

$= \mathbf{27 \text{ in.}^3}$

(b) $6(9 \text{ in.}^2) = \mathbf{54 \text{ in.}^2}$

13. (a) $C \approx \frac{22}{7}(14 \text{ m})$

$C \approx \mathbf{44 \text{ m}}$

(b) $C = \pi(14 \text{ m})$

$C = \mathbf{14\pi \text{ m}}$

14. (a) $3\frac{1}{2} = \mathbf{3.5}$

(b) $3\frac{1}{2} = \frac{7}{2} \times 100\% = \frac{700\%}{2} = \mathbf{350\%}$

(c) $35\% = \frac{35}{100} = \mathbf{\frac{7}{20}}$

(d) $35\% = \frac{35}{100} = \mathbf{0.35}$

15. **Multiply the "in" number by 3; then add 1 to find the "out" number.**

$5(3) + 1 = \mathbf{16}$

$25 - 1 = 24$

$24 \div 3 = \mathbf{8}$

16. $\mathbf{4.25 \times 10^8}$

17. (a) **Parallelogram**

(b) **Trapezoid**

(c) **Isosceles triangle**

18. (a) $m\angle ABC = 180° - 100° = \mathbf{80°}$

(b) $m\angle BCE = m\angle A = \mathbf{100°}$

(c) $m\angle ECD = 180° - 100° = \mathbf{80°}$

(d) $m\angle EDC = m\angle ECD = \mathbf{80°}$

(e) $m\angle DEC = 180° - (80° + 80°)$
$= 180° - 160° = \mathbf{20°}$

(f) $m\angle DEA = 20° + 80° = \mathbf{100°}$

19. **0.0103, 0.013, 0.021, 0.1023**

20. $\left(1\frac{1}{2} + 2\frac{2}{3}\right) - \left(1\frac{1}{2}\right)\left(2\frac{2}{3}\right)$

$= \left(\frac{3}{2} + \frac{8}{3}\right) - \left(\frac{3}{2}\right)\left(\frac{8}{3}\right)$

$= \left(\frac{3}{2} + \frac{8}{3}\right) - (4)$

$= \frac{9}{6} + \frac{16}{6} - \frac{24}{6}$

$= \frac{25}{6} - \frac{24}{6} = \mathbf{\frac{1}{6}}$

21. $p + 3\frac{1}{5} = 7\frac{1}{2}$

$p + 3\frac{1}{5} - 3\frac{1}{5} = 7\frac{1}{2} - 3\frac{1}{5}$

$p = \frac{15}{2} - \frac{16}{5}$

$p = \frac{75}{10} - \frac{32}{10}$

$p = \frac{43}{10} = \mathbf{4\frac{3}{10}}$

check: $4\frac{3}{10} + 3\frac{1}{5} = 7\frac{1}{2}$

$4\frac{3}{10} + 3\frac{2}{10} = 7\frac{1}{2}$

$7\frac{5}{10} = 7\frac{1}{2}$

$7\frac{1}{2} = 7\frac{1}{2}$

22. $3n = 0.138$

$\frac{3n}{3} = \frac{0.138}{3}$

$n = \mathbf{0.046}$

check: $3(0.046) = 0.138$

$0.138 = 0.138$

23. $n - 0.36 = 4.8$

$n - 0.36 + 0.36 = 4.8 + 0.36$

$n = \mathbf{5.16}$

check: $5.16 - 0.36 = 4.8$

$4.8 = 4.8$

24. $\frac{2}{3}x = \frac{8}{9}$

$\left(\frac{\overset{1}{\cancel{3}}}{\cancel{2}}\right)\left(\frac{\overset{1}{\cancel{2}}}{\cancel{3}}x\right) = \left(\frac{\overset{1}{\cancel{3}}}{\cancel{2}}\right)\left(\frac{\overset{4}{\cancel{8}}}{\cancel{9}}\right)$

$x = \mathbf{\frac{4}{3}}$

check: $\left(\frac{2}{3}\right)\left(\frac{4}{3}\right) = \frac{8}{9}$

$\frac{8}{9} = \frac{8}{9}$

25. $\sqrt{49} + \{5[3^2 - (2^3 - \sqrt{25})] - 5^2\}$

$7 + \{5[9 - (8 - 5)] - 25\}$

$7 + \{5[9 - (3)] - 25\}$

$7 + \{5[6] - 25\}$

$7 + \{30 - 25\}$

$7 + \{5\}$

$\mathbf{12}$

26. (60 min), (60 s)

$\overset{3}{\cancel{4}}$ hr $\overset{4}{\cancel{5}}$ min 15 s

$-$ 1 hr 15 min 30 s $\longrightarrow$

$\overset{3}{\cancel{4}}$ hr $\overset{64}{\overset{4}{\cancel{5}}}$ min $\overset{75}{\cancel{15}}$ s

$-$ 1 hr 15 min 30 s

2 hr 49 min 45 s

27. (a) $(-9) + (-11) - (+14)$

$(-9) + (-11) + [-(+14)]$

$(-9) + (-11) + [-14]$

$\mathbf{-34}$

(b) $(26) + (-43) - |-36|$

$(26) + (-43) + [-|-36|]$

$(26) + (-43) + [-36]$

$\mathbf{-53}$

28. (a) $(-3)(12) = \mathbf{-36}$

(b) $(-3)(-12) = \mathbf{36}$

(c) $\frac{-12}{3} = \mathbf{-4}$

(d) $\frac{-12}{-3} = \mathbf{4}$

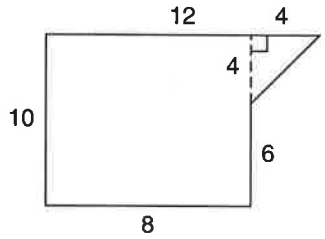
29. $7.5 = 7\frac{1}{2}$

$8\frac{1}{3} + 7\frac{1}{2} = 8\frac{2}{6} + 7\frac{3}{6} = \mathbf{15\frac{5}{6}}$

30. **South**

Lesson 75, Lesson Practice

a.

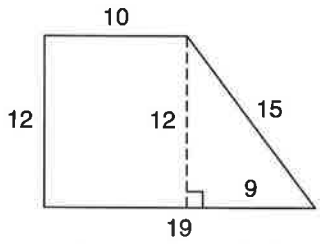


$$\text{Area of rectangle} = (8\text{ cm})(10\text{ cm}) = 80\text{ cm}^2$$

$$\text{Area of triangle} = \frac{(4\text{ cm})(4\text{ cm})}{2} = 8\text{ cm}^2$$

$$\text{Area of figure} = 80\text{ cm}^2 + 8\text{ cm}^2 = \mathbf{88\text{ cm}^2}$$

b.

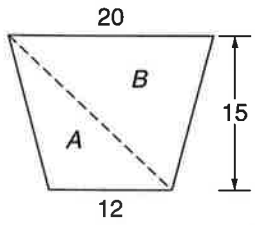


$$\text{Area of rectangle} = (10\text{ cm})(12\text{ cm}) = 120\text{ cm}^2$$

$$\text{Area of triangle} = \frac{(9\text{ cm})(12\text{ cm})}{2} = 54\text{ cm}^2$$

$$\text{Area of figure} = 120\text{ cm}^2 + 54\text{ cm}^2 = \mathbf{174\text{ cm}^2}$$

c.



$$\text{Area of triangle } A = \frac{(12\text{ cm})(15\text{ cm})}{2} = 90\text{ cm}^2$$

$$\text{Area of triangle } B = \frac{(20\text{ cm})(15\text{ cm})}{2} = 150\text{ cm}^2$$

$$\text{Area of figure} = 90\text{ cm}^2 + 150\text{ cm}^2 = \mathbf{240\text{ cm}^2}$$

Lesson 75, Mixed Practice

1. $5(72\text{ seconds}) + 3(80\text{ seconds})$
$= 360\text{ seconds} + 240\text{ seconds} = 600\text{ seconds}$

$$\frac{600\text{ seconds}}{8} = \mathbf{75\text{ seconds}}$$

2. $\dfrac{\$2.49}{30\text{ ounces}} = \dfrac{\$0.083}{1\text{ ounce}}$

8.3¢ per ounce

3. **1.5 kilometers**

4.
$$\left(\frac{1}{2} + \frac{3}{5}\right) - \left(\frac{1}{2}\right)\left(\frac{3}{5}\right)$$
$$= \left(\frac{5}{10} + \frac{6}{10}\right) - \left(\frac{3}{10}\right)$$
$$= \frac{11}{10} - \frac{3}{10} = \frac{8}{10}$$
$$= \mathbf{\frac{4}{5}}$$

5.
$$\frac{3}{2} = \frac{60\text{ years}}{C}$$
$$3C = 2(60\text{ years})$$
$$C = 40\text{ years}$$
$$60\text{ years} - 40\text{ years} = \mathbf{20\text{ years}}$$

6. $12.5 \times 10^{-4} \equiv 1.25 \times 10^{-3}$

7.

	Case 1	Case 2
Miles	40	100
Hours	3	h

$$\frac{40}{3} = \frac{100}{h}$$
$$40h = 3(100)$$
$$h = \frac{300}{40}$$
$$h = \frac{15}{2} = \mathbf{7\frac{1}{2}\text{ hours}}$$

8.

21,000 books

$\frac{2}{5}$ were checked out.	4200 books
	4200 books
$\frac{3}{5}$ were not checked out.	4200 books
	4200 books
	4200 books

(a) **8400 books**

(b) **12,600 books**

9.
$$\mathbf{60 = \frac{5}{12} \times W_N}$$
$$\frac{\cancel{12}}{\cancel{5}_1}\left(\cancel{60}^{12}\right) = \frac{\cancel{12}^{1}}{\cancel{5}_1} \times \frac{\cancel{5}^{1}}{\cancel{12}_1} \times W_N$$
$$\mathbf{144 = W_N}$$

10. $0.7 \times \$35.00 = M$

$\$24.50 = M$

11. $35 = W_F \times 80$

$\frac{35}{80} = \frac{W_F \times 80}{80}$

$\frac{7}{16} = W_F$

12. $56 = W_D \times 70$

$\frac{56}{70} = \frac{W_D \times 70}{70}$

$0.8 = W_D$

13. (a) $\frac{-120}{4} = \mathbf{-30}$

(b) $(-12)(11) = \mathbf{-132}$

(c) $\frac{-120}{-5} = \mathbf{24}$

(d) $12(+20) = \mathbf{240}$

14. $(20\text{ cm})(15\text{ cm}) = 300\text{ cm}^2$

$\frac{300\text{ cm}^2}{1\text{ layer}} \cdot (1\text{ cm})(10\text{ layers})$

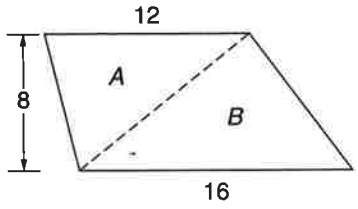
$\mathbf{3000\text{ cm}^3}$

15. $C \approx \frac{22}{7}(11\text{ inches})$

$C \approx \frac{242}{7}\text{ inches}$

$C \approx 34\frac{4}{7}\text{ inches} \approx \mathbf{34\frac{1}{2}\text{ inches}}$

16.



Area of triangle $A = \frac{(12\text{ in.})(8\text{ in.})}{2}$

$= 48\text{ in.}^2$

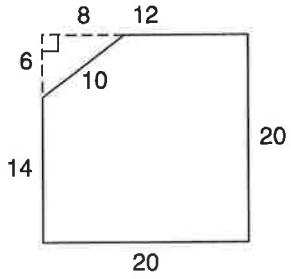
Area of triangle $B = \frac{(16\text{ in.})(8\text{ in.})}{2}$

$= 64\text{ in.}^2$

Area of figure $= 48\text{ in.}^2 + 64\text{ in.}^2$

$= \mathbf{112\text{ in.}^2}$

17.



(a) **20 cm**

(b) Perimeter $= 12\text{ cm} + 20\text{ cm} + 20\text{ cm} + 14\text{ cm} + 10\text{ cm} = \mathbf{76\text{ cm}}$

(c) Area of rectangle $= (20\text{ cm})(20\text{ cm})$

$= 400\text{ cm}^2$

Area of triangle $= \frac{(8\text{ cm})(6\text{ cm})}{2}$

$= 24\text{ cm}^2$

Area of figure $= 400\text{ cm}^2 - 24\text{ cm}^2$

$= \mathbf{376\text{ cm}^2}$

18. (a) $125\% = \frac{125}{100} = \mathbf{1\frac{1}{4}}$

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

(c) $8\overline{)1.000}$ $\quad \mathbf{0.125}$

(d) $\frac{1}{8} \times 100\% = \frac{100\%}{8} = \mathbf{12\frac{1}{2}\%}$ or $\mathbf{12.5\%}$

19.

\$12.50	\$12.50
$\times$ 0.20	+ \$ 2.50
\$ 2.50	**\$15.00**

20. $(2)^3 - (2)(0.5) - \frac{2}{0.5}$

$= 8 - 1 - 4 = \mathbf{3}$

21. $\frac{5}{8}x = 40$

$\left(\frac{8}{5}\right)\frac{5}{8}x = \left(\frac{8}{5}\right)40$

$x = \mathbf{64}$

check: $\frac{5}{8}(64) = 40$

$5(8) = 40$

$40 = 40$