Lesson Practice **101**

a. **4;** the mixed number $3\frac{2}{3}$ is between 3 and 4. We need to decide whether it is nearer 3 or nearer 4. The number $3\frac{1}{2}$ is halfway between 3 and 4. The number $3\frac{2}{3}$ is more than $3\frac{1}{2}$ because the numerator of $\frac{2}{3}$ is more than half the denominator. So we round $3\frac{2}{3}$ up to 4.

b. **7;** the mixed number $7\frac{1}{8}$ is between 7 and 8. We need to decide whether it is nearer 7 or nearer 8. The number $7\frac{1}{2}$ is halfway between 7 and 8. The number $7\frac{1}{8}$ is less than $7\frac{1}{2}$ because the numerator of $\frac{1}{8}$ is less than half the denominator. So we round $7\frac{1}{8}$ down to 7.

c. **7;** the mixed number $6\frac{3}{5}$ is between 6 and 7. We need to decide whether it is nearer 6 or nearer 7. The number $6\frac{1}{2}$ is halfway between 6 and 7. The number $6\frac{3}{5}$ is more than $6\frac{1}{2}$ because the numerator of $\frac{3}{5}$ is more than half the denominator. So we round $6\frac{3}{5}$ up to 7.

d. **6;** the mixed number $6\frac{1}{4}$ is between 6 and 7. We need to decide whether it is nearer 6 or nearer 7. The number $6\frac{1}{2}$ is halfway between 6 and 7. The number $6\frac{1}{4}$ is less than $6\frac{1}{2}$ because the numerator of $\frac{1}{4}$ is less than half the denominator. So we round $6\frac{1}{4}$ down to 6.

e. **13;** the mixed number $12\frac{5}{6}$ is between 12 and 13. We need to decide whether it is nearer 12 or nearer 13. The number $12\frac{1}{2}$ is halfway between 12 and 13. The number $12\frac{5}{6}$ is more than $12\frac{1}{2}$ because the numerator of $\frac{5}{6}$ is more than half the denominator. So we round $12\frac{5}{6}$ up to 13.

f. **25;** the mixed number $25\frac{3}{10}$ is between 25 and 26. We need to decide whether it is nearer 25 or nearer 26. The number $25\frac{1}{2}$ is halfway between 25 and 26. The number $25\frac{3}{10}$ is less than $25\frac{1}{2}$ because the numerator of $\frac{3}{10}$ is less than half the denominator. So we round $25\frac{3}{10}$ down to 25.

g. **50;** we round $9\frac{4}{5}$ to 10, and we round $5\frac{1}{3}$ to 5. Then we multiply $A = l \times w = 10 \times 5 = 50$

h. **48;** we round $36\frac{5}{8}$ to 37, and we round $10\frac{9}{10}$ to 11. Then we add $A = l + w = 37 + 11 = 38$

i. **28 in.;** $P = 9$ in. $+ 5$ in. $+ 9$ in. $+ 5$ in. $= 28$ in.

Written Practice **101**

1. $\frac{3}{2}$; $\frac{60}{40}$, $\frac{3}{2}$

2. **2 meters;** An octagon has 8 equal sides. $P = 8 \times 25$ cm $= 200$ cm $= 2$ meters

3. **1776;** $1826 - 50 = 1776$

4. **D;** $\frac{3}{4} \times 100 = \frac{300}{4} = 75$

5. **30 mm; 3 cm**

6. **1.5 cm;** 3 cm $\div 2 = 1\frac{1}{2}$ cm $= 1.5$ cm

7. **$9;** sample: 80¢ is more than 50¢; so we round up to $9

8. **11;** we round $7\frac{3}{4}$ to 8, and we round $18\frac{7}{8}$ to 19. Then we subtract to find the difference. $19 - 8 = 11$.

9. **80 yards;** there are 3 feet in 1 yard. $240 \div 3 = 80$ yards

10. **110 mm;** *BC* is equal to 60 mm $\div 2 = 30$ mm *CD* is equal to 60 mm $\div 3 = 20$ mm

$$
\begin{array}{rl}
AB & 60 \text{ mm} \\
BC & 30 \text{ mm} \\
+ \ CD & 20 \text{ mm} \\
\hline
AD & 110 \text{ mm}
\end{array}
$$

11. **24.87;**
$$
\begin{array}{r}
\overset{1}{}4.00 \\
8.57 \\
+ \ 12.30 \\
\hline
24.87
\end{array}
$$

12. **4.37;**
$$
\begin{array}{r}
16.37 \\
- \ 12.00 \\
\hline
4.37
\end{array}
$$

13. **$35.80;**
$$
\begin{array}{r}
\$3.58 \\
\times \ 10 \\
\hline
\$35.80
\end{array}
$$

14. **576;** $24 \times 24 = 576$

15. **172;**
$$
\begin{array}{r}
172 \\
25\overline{)4300} \\
-25 \\
\hline
180 \\
-175 \\
\hline
50 \\
-50 \\
\hline
0
\end{array}
$$

Solutions

16. **$1.44;** $w = \dfrac{\$20.16}{14};$

$$\begin{array}{r} \$\ 1.44 \\ 14\overline{)\$20.16} \\ \underline{-14} \\ 61 \\ \underline{-56} \\ 56 \\ \underline{-56} \\ 0 \end{array}$$

17. **7;** $3 + 4 = 7$

18. $\dfrac{\mathbf{10}}{\mathbf{12}}, \dfrac{\mathbf{3}}{\mathbf{12}}, \dfrac{\mathbf{7}}{\mathbf{12}};$ we multiply $\dfrac{5}{6}$ by $\dfrac{2}{2}$ and $\dfrac{1}{4}$ by $\dfrac{3}{3}.$
$\dfrac{5}{6} \times \dfrac{2}{2} = \dfrac{\mathbf{10}}{\mathbf{12}}$ and $\dfrac{1}{4} \times \dfrac{3}{3} = \dfrac{\mathbf{3}}{\mathbf{12}}.$ Then we subtract
$\dfrac{10}{12}$ and $\dfrac{3}{12}$ to find their difference. $\dfrac{10}{12} - \dfrac{3}{12} = \dfrac{\mathbf{7}}{\mathbf{12}}.$

19. $\mathbf{8\tfrac{1}{5}};$ $7\tfrac{6}{5} = 8\tfrac{1}{5}$

20. $\mathbf{7\tfrac{2}{3}};$ $7\tfrac{4}{6} = 7\tfrac{2}{3}$

21. $\dfrac{\mathbf{1}}{\mathbf{10}};$ $\dfrac{10}{10} = \dfrac{1}{10}$

22. $\mathbf{2\tfrac{1}{2}};$ $2 \div \dfrac{4}{5}$

$$2 \times \dfrac{5}{4} = \dfrac{10}{4} = 2\tfrac{2}{4} = 2\tfrac{1}{2}$$

23. **18;** $\dfrac{9}{50} \times \dfrac{2}{2} = \dfrac{18}{100}$

24. **a.** **28.2 seconds;** $29.2 - 1.0 = 28.2$

 b. **8 points;** 5 points + 3 points = 8 points

25. $\dfrac{\mathbf{1}}{\mathbf{2}};$ $50 \div \dfrac{50}{100} \div 50 = \dfrac{1}{2}$

26. **A (4, 4), B(2, 1), C(4, 1)**

27. **13.9**

28. **144 sq. in.;** 12 in. × 12 in. = 144 sq. in.

29. **length: 1 in.; width: $\tfrac{1}{2}$ in.; perimeter: 3 in.;**
$P = 1 + \tfrac{1}{2} + 1 + \tfrac{1}{2} = 2\tfrac{2}{2} = 3$ in.

30. $\dfrac{\mathbf{3}}{\mathbf{10}};$ **sample: another name of 1 is $\dfrac{10}{10}$, and**
$\dfrac{10}{10} - \dfrac{7}{10} = \dfrac{3}{10}.$

Lesson Practice 102

a. **0.15;**
$$\begin{array}{r} \overset{2}{0}.\overset{1}{3}0 \\ -\ 0.15 \\ \hline 0.15 \end{array}$$

b. **0.05;**
$$\begin{array}{r} \overset{2}{0}.\overset{1}{3}0 \\ -\ 0.25 \\ \hline 0.05 \end{array}$$

---

c. **3.78;**
$$\begin{array}{r} \overset{3}{\cancel{4}}.\overset{1}{2}\overset{1}{0} \\ -\ 0.42 \\ \hline 3.78 \end{array}$$

d. **3.15;**
$$\begin{array}{r} 3.\overset{4}{\cancel{5}}\overset{1}{0} \\ -\ 0.35 \\ \hline 3.15 \end{array}$$

e. **3.5;**
$$\begin{array}{r} 1\overset{9}{\cancel{0}}.\overset{1}{0} \\ -\ 6.5 \\ \hline 3.5 \end{array}$$

f. **2.5;**
$$\begin{array}{r} 6.5 \\ -\ 4.0 \\ \hline 2.5 \end{array}$$

g. **0.1;**
$$\begin{array}{r} \overset{0}{\cancel{1}}.\overset{1}{0} \\ -\ 0.9 \\ \hline 0.1 \end{array}$$

h. **0.9;**
$$\begin{array}{r} \overset{0}{\cancel{1}}.\overset{1}{0} \\ -\ 0.1 \\ \hline 0.9 \end{array}$$

i. **0.75;**
$$\begin{array}{r} \overset{0}{\cancel{1}}.\overset{9}{\cancel{0}}\overset{1}{0} \\ -\ 0.25 \\ \hline 0.75 \end{array}$$

j. **1.5;**
$$\begin{array}{r} 2.5 \\ -\ 1.0 \\ \hline 1.5 \end{array}$$

k. **0.8 liters;**
$$\begin{array}{r} \overset{1}{2}.\overset{1}{0}\ \text{liters} \\ -\ 1.2\ \text{liters} \\ \hline 0.8\ \text{liters} \end{array}$$

l. **About 35 square miles;** 50.4 rounds to 50,
 14.9 rounds to 15, and 50 − 15 = 35.

Written Practice 102

1. **trapezoid; sample:**

2. **About 8 pounds;** a gallon contains eight
 pints of water, so it weighs about 8 pounds.

3. **11;** we round $7\tfrac{1}{5}$ to 7, and we round $3\tfrac{7}{8}$ to 4.
 Then we add to find the sum. 7 + 4 = 11.

4. **35 people; mean and median**

5. **16;** $m = \dfrac{100}{25} = 4$, so $m^2 = 4 \times 4 = 16$

---

6. **0.1 (or 0.10); $\frac{1}{10}$; 10%**

7. **$\frac{8}{40}$; $\frac{35}{40}$; $1\frac{3}{40}$**; we multiply $\frac{1}{5}$ by $\frac{8}{8}$ and $\frac{7}{8}$ by $\frac{5}{5}$.
$\frac{1}{5} \times \frac{8}{8} = \frac{8}{40}$ and $\frac{7}{8} \times \frac{5}{5} = \frac{35}{40}$. Then we add $\frac{8}{40}$
and $\frac{35}{40}$ to find their sum. $\frac{8}{40} + \frac{35}{40} = \frac{43}{40}$, which
is equal to **$1\frac{3}{40}$**.

8. **=; one tenth = ten hundredths**

9. **6, 12, 18, 24**

10. a. **4 inches**

    b. **12 inches**

11. **120.6 million bushels;**
Step 1: Find the number that France
produced.

$$
\begin{array}{r}
7\overset{5}{\cancel{6}}.7 \text{ USA} \\
- \ 32.8 \\
\hline
43.9 \text{ million bushels}
\end{array}
$$

Step 2: Find the amount produced together.

$$
\begin{array}{r}
\overset{1\ 1}{76.7} \text{ USA} \\
+ \ 43.9 \text{ France} \\
\hline
120.6 \text{ million bushels}
\end{array}
$$

12. **0.28;**
$$
\begin{array}{r}
0.\overset{3}{\cancel{4}}0 \\
- \ 0.12 \\
\hline
0.28
\end{array}
$$

13. **5.49;**
$$
\begin{array}{r}
\overset{5\ \ 11}{\cancel{6}.\cancel{2}0} \\
- \ 0.71 \\
\hline
5.49
\end{array}
$$

14. **9097;**
$$
\begin{array}{r}
\overset{2\ 3\ 2}{315} \\
273 \\
4197 \\
586 \\
92 \\
+ \ 3634 \\
\hline
9097
\end{array}
$$

15. **$39.24;**
$$
\begin{array}{r}
\overset{3\ 5}{\$4.36} \\
\times \ \ \ \ 9 \\
\hline
\$39.24
\end{array}
$$

16. **421,200;**
$$
\begin{array}{r}
\overset{2}{\underset{3}{540}} \\
\times \ 780 \\
\hline
43200 \\
+ \ 378000 \\
\hline
421,200
\end{array}
$$

17. **72;**
$$
\begin{array}{r}
72 \\
6\overline{)432} \\
\underline{-42} \\
12 \\
\underline{-12} \\
0
\end{array}
$$

18. **72;**
$$
\begin{array}{r}
72 \\
12\overline{)864} \\
\underline{-84} \\
24 \\
\underline{-24} \\
0
\end{array}
$$

19. **$1\frac{2}{3}$;** $5 - \left(1\frac{2}{3} + 1\frac{2}{3}\right)$

$$5 - \qquad 2\frac{4}{3}$$
$$\downarrow \qquad\qquad \downarrow$$
$$4\frac{3}{3} - \qquad 3\frac{1}{3} \ = 1\frac{2}{3}$$

20. **1;** $\frac{5}{6} \times \left(3 \times \frac{2}{5}\right)$

$$\frac{5}{6} \times \qquad \frac{6}{5} \ = \frac{30}{30} = 1$$

21. **6;** $2 \div \frac{1}{3}$

$$\downarrow \ \downarrow$$
$$2 \times \frac{3}{1} = \frac{6}{1} = 6$$

22. **$\frac{1}{6}$;** $\frac{1}{3} \div 2$

$$\downarrow \ \downarrow$$
$$\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$$

23. **24;** $\frac{12}{50} \times \frac{2}{2} = \frac{24}{100}$

24. a. **24 hours;** $7 + 9 + 2 + 2 + 4 = 24$ hours

    b. **$\frac{3}{8}$;** $\frac{9}{24} = \frac{3}{8}$

25. **0.6L;**
$$
\begin{array}{r}
\overset{1\ 1}{2}.0 \text{ L} \\
- \ 1.4 \text{ L} \\
\hline
0.6 \text{ L}
\end{array}
$$

26. **3.7, 4.0, 4.3, 4.6**

27. **24 blocks;** $2 \times 4 \times 3 = 24$ blocks

28. **$\frac{23}{80}$;** $\frac{23}{(23 + 16 + 41)} = \frac{23}{80}$

29. **0.001, $\frac{1}{100}$, $\frac{1}{10}$, 1.0**

Solutions

30. **a.** **Bar graphs and pictographs are appropriate graphs; see student work.**

   b. **See student work.**

Early Finishers

a. **0.021 higher;**

$$\begin{array}{r} 0.\overset{2\ \ 9_1}{\cancel{3}\cancel{0}0} \\ -\ 0.279 \\ \hline 0.021 \text{ higher} \end{array}$$

b. **0.291;**

$$\begin{array}{r} 0.\overset{2\ \ 9_1}{\cancel{3}\cancel{0}0} \\ -\ 0.009 \\ \hline 0.291 \end{array}$$

Lesson Practice 103

a. **32 cubic inches;** the solid is 2 in. long, 4 in. wide, and 4 in. high. There are 8 cubes in each layer of the solid. The solid has 4 layers, so there are 32 in all. Since the cubes are 1 in. cubes, the volume is 32 cubic inches.

b. **27 cubic centimeters;** the solid is 3 cm long, 3 cm wide, and 3 cm high. For the bottom layer, we imagine a 3-by-3 rectangle of 1-cm cubes, which is 9 cubes. Three layers are needed for the whole solid. Since $3 \times 9 = 27$, the volume is 27 cubic centimeters.

c. **cubic inches**

d. **D**

e. $V = l \times w \times h = 6$ **in. $\times$ 6 in. $\times$ 6 in. = 216 cu. in. The volume of the chest is 216 cubic inches.**

f. **Sample: Round** $5\frac{1}{4}$ **to 5,** $2\frac{1}{8}$ **to 2, and** $7\frac{5}{8}$ **to 8; a reasonable estimate is** $5 \times 2 \times 8$**, or 80 cubic inches.**

Written Practice 103

1. $\frac{3}{5}$; $\frac{15}{25} = \frac{3}{5}$

2. **about 4 ounces; about** $33\frac{1}{3}\%$**;** $\frac{1}{3}$ of 12 = $\frac{12}{3} = 4$

3. $\frac{1}{2}$**;** there are 3 prime numbers on the cube (1, 3, and 5). The probability is $\frac{3}{6}$ or $\frac{1}{2}$.

4. **1.5;** $1\frac{1}{2}$**;** $1\frac{5}{10} = 1.5 = 1\frac{1}{2}$

5. **1;** the 6 in 56.78 is in the ones place. The digit in the ones place in 1.234 is 1.

6. **60 centimeters;** the diameter is twice the radius. 2×30 cm = 60 cm.
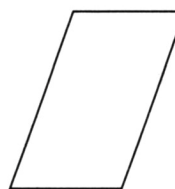
7. **4 rows of 6 students; 3 students in the last row;** $27 \div 6 = 4 \text{ R } 3$

8. **85 minutes, or 1 hour 25 minutes; sample: add the times together using parentheses to separate each person's time; 30 + (30 − 15) + (30 + 10) = 85.**

9. **D**

10. **24 in.; 32 sq. in.;** round $7\frac{7}{8}$ in. to 8 in. and $4\frac{1}{4}$ in. to 4 in. Perimeter = 8 in. + 4 in. + 8 in. + 4 in. = 24 in. Area = 8 in. $\times$ 4 in. = 32 sq. in.

11. **Sample:**

2 acute angles

12. **0.65;**

$$\begin{array}{r} \overset{2\ \ 9_1}{\cancel{3}.\cancel{0}0} \\ -\ 2.35 \\ \hline 0.65 \end{array}$$

13. **5.94;**

$$\begin{array}{r} \overset{9\ \ 9_1}{\cancel{1}0.\cancel{0}0} \\ -\ 4.06 \\ \hline 5.94 \end{array}$$

14. **31.95;**

$$\begin{array}{r} \overset{1}{4}.35 \\ 12.60 \\ +\ 15.00 \\ \hline 31.95 \end{array}$$

15. **118,440;** $7 \times 47 \times 360$

$$\begin{array}{r} \overset{4}{4}7 \\ \times\ 7 \\ \hline 329 \end{array} \times 360$$

$$\begin{array}{r} \overset{2}{\underset{5}{\overset{1}{}}}329 \\ \times\ 360 \\ \hline \overset{1\ 1}{19740} \\ +\ 98700 \\ \hline 118,440 \end{array}$$

16. **32;** $2 \times 2 \times 2 \times 2 \times 2 = 32$

17. $2.35;

$$\begin{array}{r} \$\ 2.35 \\ 20\overline{)\$47.00} \\ \underline{-40} \\ 70 \\ \underline{-60} \\ 100 \\ \underline{-100} \\ 0 \end{array}$$

18. 2; $5 - 3 = 2$

19. 132; $x = \frac{2112}{16}$;

$$\begin{array}{r} 132 \\ 16\overline{)2112} \\ \underline{-16} \\ 51 \\ \underline{-48} \\ 32 \\ \underline{-32} \\ 0 \end{array}$$

20. 5; $3\frac{2}{3} + \left(2 - \frac{2}{3}\right)$

$$3\frac{2}{3} + \left(1\frac{3}{3} - \frac{2}{3}\right)$$
$$3\frac{2}{3} + \quad 1\frac{1}{3} \quad = 4\frac{3}{3} = 5$$

21. $\frac{1}{2}$; $\frac{1}{2} \times \left(4 \times \frac{1}{4}\right)$

$$\frac{1}{2} \times \quad \frac{4}{4} \quad = \frac{4}{8} = \frac{1}{2}$$

22. $\frac{5}{7}$; $1 \div \frac{7}{5}$

$$1 \times \frac{5}{7} = \frac{5}{7}$$

23. $2\frac{1}{4}$; $\frac{3}{2} \div \frac{3}{2}$

$$\frac{3}{2} \times \frac{3}{2} = \frac{9}{4} = 2\frac{1}{4}$$

24. $\frac{1}{5}$; $\frac{20}{100} = \frac{1}{5}$

25. 4; $\frac{1}{25} \times \frac{4}{4} = \frac{4}{100}$

26. $\frac{1}{2}$; divide top and bottom numbers by 500.

27. a. 45 cubic cm; the solid is 3 cm long, 5 cm wide, and 3 cm high. For the bottom layer, we imagine a 3-by-5 rectangle of 1-cm cubes, which is 15 cubes. Three layers are needed for the whole solid. Since $3 \times 15 = 45$, the volume is 45 cubic centimeters.

   b. 6 faces

   c. 8 vertices

28. a. *A*(2, 5), *B*(0, 2), *C*(2, 2)

   b.
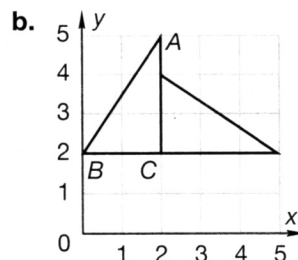
29. a. $\frac{3}{4}$ in.

   b. $2\frac{1}{4}$ in.; $P = \frac{3}{4} + \frac{3}{4} + \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}$ in.

   c. equilateral (and isosceles), acute

30. a. $4\frac{1}{2}$ **or 4.5;** $(4 + 5) \div 2 = 9 \div 2 = 4\frac{1}{2}$ or 4.5

   b. 55 electoral votes; $11 \times 5 =$ 55 electoral votes

   c. Wyoming, Nebraska, and Idaho; $3 + 5 + 4 = 12$

Early Finishers

   a. See student work.

   b. See student work.
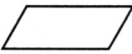
   c. See student work.

Lesson Practice 104

a. $6; we round money to nearest dollar like rounding a decimal number to the nearest whole number. The number 6.24 is between 6 and 7. Halfway from 6 to 7 is 6.5. Since 6.24 is less than 6.5, we round down to the whole number 6.

b. $15; we round money to nearest dollar like rounding a decimal number to the nearest whole number. The number 15.06 is between 15 and 16. Halfway from 15 to 16 is 15.5. Since 15.06 is less than 15.5, we round down to the whole number 15.

c. $119; we round money to the nearest dollar like rounding a decimal number to the nearest whole number. The number 118.59 is between 118 and 119. Halfway from 118 to 119 is 118.5. Since 118.59 is greater than 118.5, we round up to the whole number 119.

d. **$20**; we round $12.89 to $13 and $6.95 to $7, then add $13 + $7 = $20.

e. **5**; we must round the decimal number to the nearest whole number. The number 4.75 is between 4 and 5. Halfway from 4 to 5 is 4.5. Since 4.75 is greater than 4.5, we round up to the whole number 5.

f. **12**; we must round the decimal number to the nearest whole number. The number 12.3 is between 12 and 13. Halfway from 12 to 13 is 12.5. Since 12.3 is less than 12.5, we round down to the whole number 12.

g. **96**; we must round the decimal number to the nearest whole number. The number 96.41 is between 96 and 97. Halfway from 96 to 97 is 96.5. Since 96.41 is less than 96.5, we round down to the whole number 96.

h. **7**; we must round the decimal number to the nearest whole number. The number 7.4 is between 7 and 8. Halfway from 7 to 8 is 7.5. Since 7.4 is less than 7.5, we round down to the whole number 7.

i. **46**; we must round the decimal number to the nearest whole number. The number 45.6 is between 45 and 46. Halfway from 45 to 46 is 45.5. Since 45.6 is greater than 45.5, we round up to the whole number 46.

j. **90**; we must round the decimal number to the nearest whole number. The number 89.89 is between 89 and 90. Halfway from 89 to 90 is 89.5. Since 89.89 is greater than 89.5, we round up to the whole number 90.

k. **70**; the decimal number 9.8 round to the whole number 10, and the decimal number 6.97 rounds to the whole number 7. We multiply 10 by 7 and find that the product of 9.8 and 6.97 is about 70.

l. **68 seconds**; we round time to nearest second like rounding a decimal number to the nearest whole number. The number 68.27 is between 68 and 69. Halfway from 68 to 69 is 68.5. Since 68.27 is less than 68.5, we round down to the whole number 68.

m. **120 cu. cm**; round 9.8 cm to 10 cm, 6.2 cm to 6 cm, and 1.9 cm to 2 cm. Find the volume by multiplying: $V = l \times w \times h = 10 \text{ cm} \times 6 \text{ cm} \times 2 \text{ cm} = 120$ cu. cm.

Written Practice 104

1. **Sample:**

2. a. **9 girls**; $\frac{1}{2}$ of 18 is 9

   b. **27 students**; $18 + 9 = 27$

   c. $\mathbf{\frac{2}{1}}$; $\frac{18}{9} = \frac{2}{1}$

3. a. **75, 80, 80, 80, 85, 90, 90**

   b. **80**

   c. **80**

4. $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$

5. **7**; the tenths place is the first number to the right of the decimal. The digit in this position is 7.

6. **>**; $\frac{1}{2} \div \frac{1}{3} \bigcirc \frac{1}{3} \div \frac{1}{2}$

$$\frac{1}{2} \times \frac{3}{1} \bigcirc \frac{1}{3} \times \frac{2}{1}$$

$$\frac{3}{2} \bigcirc \frac{2}{3}$$

$$1\frac{1}{2} > \frac{2}{3}$$

7. $2\frac{1}{2}$, **2.5**; $\frac{1}{4} + \frac{2}{4} + \frac{3}{4} + \frac{4}{4} = \frac{10}{4} = 2\frac{2}{4} = 2\frac{1}{2} = 2.5$;

8. **4**; the mixed number $4\frac{3}{10}$ is between 4 and 5. We need to decide whether it is nearer 4 or nearer 5. The number $4\frac{1}{2}$ is halfway between 4 and 5. The number $4\frac{3}{10}$ is less than $4\frac{1}{2}$ because the numerator of $\frac{3}{10}$ is less than half the denominator. So we round $4\frac{3}{10}$ down to 4.

9. a. **$10**; we round money to nearest dollar like rounding a decimal number to the nearest whole number. The number 10.49 is between 10 and 11. Halfway from 10 to 11 is 10.5. Since 10.49 is less than 10.5, we round down to the whole number 10.

b. **$10**; we round money to nearest dollar like rounding a decimal number to the nearest whole number. The number 9.51 is between 9 and 10. Halfway from 9 to 10 is 9.5. Since 9.51 is greater than 9.5, we round up to the whole number 10.

10. a. **7, 14, 21, 28, 35**

   b. **1**; the factors of 2 are 1 and 2. The factors of 7 are 1 and 7. This means that the only common factor of 2 and 7 is 1.

11. A

12. **28 sq. cm; 22 cm**; round 6.8 cm to 7 cm and 3.9 cm to 4 cm. Area = 7 cm $\times$ 4 cm = 28 sq. cm. Perimeter = 7 cm + 4 cm + 7 cm + 4 cm = 22 cm.

13. **13.27**;
$$\begin{array}{r} \overset{1}{6}.40 \\ 2.87 \\ +\ 4.00 \\ \hline 13.27 \end{array}$$

14. **$1.71**; ($16 − $5.74) ÷ 6

$$\begin{array}{r} \$1\overset{5}{\cancel{6}}.\overset{9}{\cancel{0}}\overset{1}{\cancel{0}} \\ -\ \$\ 5.74 \\ \hline \$10.26 \quad \div\ 6 \end{array}$$

$$\begin{array}{r} \$\ \ 1.71 \\ 6)\overline{\$10.26} \\ \underline{-6} \\ 42 \\ \underline{-42} \\ 06 \\ \underline{-6} \\ 0 \end{array}$$

15. **$56.40**

16. **260,592**;
$$\begin{array}{r} \overset{1\ \ 1}{\underset{5\ 4}{\overset{4\ 3}{976}}} \\ \times\ 267 \\ \hline \overset{1\ 2\ 1}{6832} \\ 58560 \\ +\ 195200 \\ \hline 260{,}592 \end{array}$$

17. **20**; sample: I divided one numerator by its denominator to find 20. Since the ratios are equal, I know 20 is the quotient for each division.

18. $\frac{6}{9}$; $1\frac{4}{9}$; we multiply $\frac{12}{3}$ by $\frac{3}{3}$ to get $\frac{6}{9}$. Then we add $\frac{6}{9}$ to $\frac{7}{9}$ and find their sum. $\frac{6}{9} + \frac{7}{9} = \frac{13}{9}$ which is equal to $1\frac{4}{9}$.

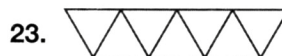**19.** $8\frac{1}{15}$; $5\frac{2}{5} + \left(3 - \frac{1}{3}\right)$

$$5\frac{2}{5} + \left(2\frac{3}{3} - \frac{1}{3}\right)$$

$$5\frac{2}{5} + 2\frac{2}{3}$$

$$5\frac{6}{15} + 2\frac{10}{15} = 7\frac{16}{15} = 8\frac{1}{15}$$

20. $\frac{1}{3}$; $2 \times \left(\frac{1}{2} \times \frac{1}{3}\right)$

$$2 \times \quad \frac{1}{6} \quad = \frac{2}{6} = \frac{1}{3}$$

21. **9**; $\frac{3}{10} \times 30 = \frac{90}{10} = 9$

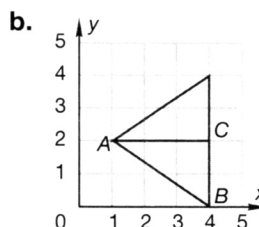**22.** **16**; $\frac{4}{25} \times \frac{4}{4} = \frac{16}{100}$

23.

24. a. **A**

   b. **Grant**

   c. **K2**

25. **90**; (10 × 10) − 10 = 100 − 10 = 90

26. a. **A(1,2), B(4,0), C(4,2)**

   b.

27. a. **160 cubic inches**; the solid is 4 in. long, 10 in. wide, and 4 in. high. For the bottom layer, we imagine a 4-by-10 rectangle of 1-in. cubes, which is 40 cubes. Four layers are needed for the whole solid. Since 4 × 40 = 160, the volume is 160 cubic inches.

   b. **8 vertices**

28. $\frac{7}{25}$; 28% is equal to $\frac{28}{100}$, which can be reduced by dividing the top and bottom by 4. $\frac{28}{100} = \frac{7}{25}$
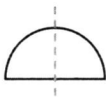
Solutions

29. A

30. C

Early Finishers

    a. **about 30 m²;** round 6.25 to 6 and 4.5 to 5. Area = 6 m × 5 m = 30 m².

    b. **21.5 meters;** $P = 6.25 + 4.5 + 6.25 + 4.5 = 21.5$ meters

    c. **11 sections;** $21.5 \div 2 = 10.75$, which means that 11 sections are required.
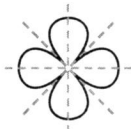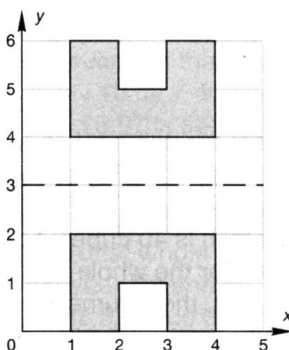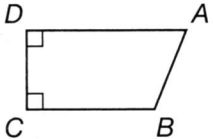
Lesson Practice   **105**

a.

b.

c.

d.

e. 8

f. S

g.

Written Practice   **105**

1. **50 girls;** $\frac{4}{5} = \frac{40}{50}$

2. **10 tenths**

3. **1 coin;** 1 quarter, 1 dime, 1 nickel and 3 pennies

4. **10.23 seconds**

5. **40 comic books;** $2 \times 20 = 40$; $100 is twice as much as $50.

6. $\frac{5}{10}; \frac{2}{5}$; we multiply $\frac{1}{2}$ by $\frac{5}{5}$ to get $\frac{5}{10}$. Then we subtract $\frac{5}{10}$ from $\frac{9}{10}$ to find the difference. $\frac{9}{10} - \frac{5}{10} = \frac{4}{10}$ which is equal to $\frac{2}{5}$.

7. **75 pages;** find the total number of pages and divide by three. $(40 + 60 + 125) \div 3 = 225 \div 3 = 75$.

8. **$24;** round $1.95 to $2, then multiply $2 \times 12 = \$24$.

9. **3;** round 20.8 to 21 and 6.87 to 7, then divide $21 \div 3 = 7$.

10. **12.88 sec;**
$$\begin{array}{r} 1\overset{2}{\cancel{3}}.\overset{9}{\cancel{0}}2 \text{ sec} \\ -\ \ 0.14 \text{ sec} \\ \hline 12.88 \text{ sec} \end{array}$$

11. **a.** $A(4,3)$, $B(4,0)$, $C(0,0)$, $D(0,3)$

    b. **12 sq. units**

    c. **14 units**

12. **2**

13. **a.** $\angle DAB$ (or $\angle BAD$)

    b. $\overline{AD}$ (or $\overline{DA}$) **and** $\overline{BC}$ (or $\overline{CB}$)

    c. **trapezoid**

14. $\frac{1}{10}; \frac{10}{100} = \frac{1}{10}$

15. $\frac{1}{2}; \frac{50}{100} = \frac{1}{2}$

16. $\frac{1}{4}; \frac{25}{100} = \frac{1}{4}$

Saxon Math Intermediate 5   **190**

17. $\frac{4}{5}$; $\frac{3}{5} \div \frac{3}{4}$

$\frac{3}{5} \times \frac{4}{3} = \frac{12}{15} = \frac{4}{5}$

18. 22.56;

$$\overset{1\,1}{3.76}$$
$$12.00$$
$$+\ 6.80$$
$$\overline{22.56}$$

19. 10.75;

$$\overset{1\ \ 9_1}{12.\cancel{0}0}$$
$$-\ 1.25$$
$$\overline{10.75}$$

20. 14; $8 + 6 = 14$

21. 961; $31 \times 31 = 961$

22. 213;

$$\begin{array}{r}213\\28\overline{)5964}\\-56\\\hline 36\\-28\\\hline 84\\-84\\\hline 0\end{array}$$

23. 426; $m = \frac{5964}{14}$;

$$\begin{array}{r}426\\14\overline{)5964}\\-56\\\hline 36\\-28\\\hline 84\\-84\\\hline 0\end{array}$$

24. $\frac{5}{5}$; $\frac{3}{20} \times \frac{5}{5} = \frac{15}{100}$

25. 28; $\frac{7}{25} \times \frac{4}{4} = \frac{28}{100}$

26.
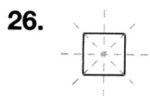
27. a. **140 cubic inches;** 7 in. × 2 in. × 10 in. = 140 cubic inches

   b. **12 edges**

28. a. **Sample: 3 p.m. and 5 p.m.**

   b. **4 p.m. to 5 p.m.; 1°F;** 80°F − 79°F = 1°F

   c. **54°F;** 80°F − 26°F = 54°F

29. a. **N**

   b. **T, E**

30. Sample: round 3,122 to 3,000 and round 3,951 to 4,000; a reasonable estimate is 3,000 + 4,000 or 7,000 votes.

Lesson Practice 106

a. twenty-five thousands; 0.025; $\frac{25}{1000}$

b. six and eight hundred seventy-five thousands

c. twenty-five thousands

d. sixteen hundredths

e. 4; the number 4.375 is a number that is 4 plus a fraction, so it is more than 4 but less than 5. Since 4.500 is halfway between 4 and 5, the number we are rounding, 4.375, is less than halfway. This means that 4.375 rounds down to 4.

f. 3; the number 2.625 is a number that is 2 plus a fraction, so it is more than 2 but less than 3. Since 2.500 is halfway between 2 and 3, the number we are rounding, 2.625, is more than halfway. This means that 2.625 rounds up to 3S.

g. 1; the number 1.33 is a number that is 1 plus a fraction, so it is more than 1 but less than 2. Since 1.50 is halfway between 1 and 2, the number we are rounding, 1.33, is less than halfway. This means that 1.33 rounds down to 1.

h. >; $\frac{375}{1000} > \frac{375}{10000}$

i. 0.1, 0.102, 0.125, 0.15

j. 0.125

Written Practice 106

1. **24 books;** $100 is four times greater than $25. 4 × 6 = 24.

2. **0.63 meter;**

$$\overset{0\ \ 9_1}{\cancel{1}.\cancel{0}0}\text{ meter}$$
$$-\ 0.37\text{ meter}$$
$$\overline{0.63\text{ meter}}$$

3. **1.50; $1\frac{1}{2}$;** $1\frac{50}{100} = 1.50 = 1\frac{1}{2}$