e. Answers will vary. See student work. Sample answer: The price on the tag was $15.00, but after tax the total was $16.13. How much was the tax?

f. Answers will vary. See student work. Sample answer: There were 32 students in the class. When some students left for band practice, 25 students remained. How many students left for band practice?

LESSON 11, MIXED PRACTICE

1. $85{,}000 + V = 200{,}000$

$$\begin{array}{r} 200{,}000 \\ -\ 85{,}000 \\ \hline 115{,}000 \end{array} \quad \begin{array}{r} 85{,}000 \text{ people} \\ +\ 115{,}000 \text{ people} \\ \hline 200{,}000 \text{ people} \end{array} \quad \text{check}$$

115,000 visitors

2. $M - \$98.03 = \$12.47$

$$\begin{array}{r} \$98.03 \\ +\ \$12.47 \\ \hline \$110.50 \end{array} \quad \begin{array}{r} \$110.50 \\ -\ \$98.03 \\ \hline \$12.47 \end{array} \quad \text{check}$$

$110.50

3. $10{,}000 - D = 5420$

$$\begin{array}{r} 10{,}000 \\ -\ 5420 \\ \hline 4580 \end{array} \quad \begin{array}{r} 5420 \text{ runners} \\ +\ 4580 \text{ runners} \\ \hline 10{,}000 \text{ runners} \end{array} \quad \text{check}$$

4580 runners

4. (a) $\frac{7}{8}$

(b) $\frac{1}{8}$

(c) $100\% \div 8 = 12\frac{1}{2}\%$

$12\frac{1}{2}\% \times 1 = 12\frac{1}{2}\%$

5. (a) $-2, 0, \frac{1}{2}, 1$

(b) $\frac{1}{2}$

6. $8\overline{)35}$ inches $\quad \begin{array}{r} 4 \\ 32 \\ \hline 3 \end{array}$ $\quad 4\frac{3}{8}$ **inches**

7. $1 \cdot 2 < 1 + 2$

8.
$$\begin{array}{r} 100 \text{ million} \\ -\ 89 \text{ million} \\ \hline 11 \text{ million} \end{array}$$

Eleven million

9. (a) **1, 2, 4, 8, 16**

(b) **1, 2, 3, 4, 6, 8, 12, 24**

(c) **1, 2, 4, 8**

(d) **8**

10.
$$\begin{array}{r} 8000 \\ -\ 5340 \\ \hline 2660 \end{array}$$

$k =$ **2660**

11.
$$\begin{array}{r} 1760 \\ -\ 1320 \\ \hline 440 \end{array}$$

$m =$ **440**

12. $4 \cdot 9 = 36$ $\quad \begin{array}{r} 20 \\ 36\overline{)720} \\ 72 \\ \hline 00 \\ 0 \\ \hline 0 \end{array}$

$n =$ **20**

13.
$$\begin{array}{r} \$375 \\ -\ \$126 \\ \hline \$249 \end{array}$$

$r =$ **$249**

14. $\begin{array}{r} 13 \\ 13\overline{)169} \\ 13 \\ \hline 39 \\ 39 \\ \hline 0 \end{array}$

$s =$ **13**

15.
$$\begin{array}{r} \$25.00 \\ \times\ \ 40 \\ \hline \$1000.00 \end{array}$$

$t =$ **$1000.00**

16. $5 \times 20 = 100 \qquad 100 - 100 = 0$

$100 - 5 = 95 \qquad \begin{array}{r} 95 \\ \times\ 20 \\ \hline 1900 \end{array}$

$0 < 1900$

$100 - (5 \times 20) < (100 - 5) \times 20$

17. $1\frac{5}{9} + 1\frac{5}{9} = 2\frac{10}{9} = 2\frac{1}{9} + \frac{9}{9}$

$= 2\frac{1}{9} + 1 = \mathbf{3\frac{1}{9}}$

18. $\frac{5}{3} \times \frac{2}{3} = \frac{10}{9} = \frac{9}{9} + \frac{1}{9} = \mathbf{1\frac{1}{9}}$

19.
$$\begin{array}{r} 135 \\ \times\ 72 \\ \hline 270 \\ 945 \\ \hline \mathbf{9720} \end{array}$$

20.
$$\begin{array}{r} \mathbf{25} \\ 40\overline{)1000} \\ 80 \\ \hline 200 \\ 200 \\ \hline 0 \end{array}$$

21.
$$\begin{array}{r} \$1.49 \\ \times\ \ 30 \\ \hline \mathbf{\$44.70} \end{array}$$

22.
$$\begin{array}{r} \mathbf{\$4.02} \\ 35\overline{)\$140.70} \\ 140 \\ \hline 07 \\ 0 \\ \hline 70 \\ 70 \\ \hline 0 \end{array}$$

23. $\mathbf{\frac{5}{54}}$

24. $\frac{5}{8} + \left(\frac{3}{8} - \frac{1}{8}\right) = \frac{5}{8} + \left(\frac{2}{8}\right) = \mathbf{\frac{7}{8}}$

25. $3\frac{3}{4} = \frac{4 \times 3 + 3}{4} = \mathbf{\frac{15}{4}}$

26. **C. 40%**

27. $\frac{1}{2} + \frac{1}{8} = \frac{4}{8} + \frac{1}{8} = \frac{5}{8}$

$\frac{5}{8} + \frac{1}{8} = \frac{6}{8} = \frac{3}{4}$

$\frac{6}{8} + \frac{1}{8} = \frac{7}{8}$

$\frac{7}{8} + \frac{1}{8} = \frac{8}{8} = 1$

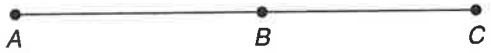
$\mathbf{\frac{5}{8}, \frac{3}{4}, \frac{7}{8}, 1}$

28. (a) $\mathbf{\angle 1, \angle 3}$

(b) $\mathbf{\angle 2, \angle 4}$

29. $AB = \mathbf{1\frac{7}{8}}$ **inches**

$BC = \mathbf{1\frac{5}{8}}$ **inches**



30. $\mathbf{\frac{8}{7}}$

LESSON 12, LESSON PRACTICE

a. **1,000,000,000 − 25,000,000 = *G***

$$\begin{array}{r} 1{,}000{,}000{,}000 \\ -\ \ 25{,}000{,}000 \\ \hline 975{,}000{,}000 \end{array}$$

975,000,000

b. **1791 − 1215 = *Y***

$$\begin{array}{r} 1791 \\ -\ 1215 \\ \hline 576 \end{array}$$

576 years

c. **1963 − *B* = 46**

$$\begin{array}{r} 1963 \\ -\ \ 46 \\ \hline 1917 \end{array}$$

John F. Kennedy was born in **1917.**

d. **Answers will vary. See student work. Sample answer: Todd is 58 in. tall and Glenda is 55 in. tall. Todd is how many inches taller than Glenda?**

e. **Answers will vary. See student work. Sample answer: Rosalie turned 14 in 2003. In what year was she born?**

LESSON 12, MIXED PRACTICE

1. **77,000 − *L* = 39,400**

$$\begin{array}{r} 77{,}000 \\ -\ 39{,}400 \\ \hline 37{,}600 \end{array} \quad \begin{array}{r} 39{,}400 \text{ fans} \\ +\ 37{,}600 \text{ fans} \\ \hline 77{,}000 \text{ fans} \end{array} \quad \text{check}$$

37,600 fans

2. ***B* + 18 = 31**

$$\begin{array}{r} 31 \\ -\ 18 \\ \hline 13 \end{array} \quad \begin{array}{r} 18 \text{ bananas} \\ +\ 13 \text{ bananas} \\ \hline 31 \text{ bananas} \end{array} \quad \text{check}$$

13 bananas

3. **1215 − 1066 = *Y***

$$\begin{array}{r} 1215 \\ -\ 1066 \\ \hline 149 \end{array}$$

149 years

4. **77,000 − 49,600 = *F***

$$\begin{array}{r} 77{,}000 \text{ fans} \\ -\ 49{,}600 \text{ fans} \\ \hline 27{,}400 \text{ fans} \end{array}$$

27,400 fans

5. **Answers will vary. See student work. Sample answer: Marla gave the clerk $20.00 to purchase a CD. Marla got back $7.13. How much did the CD cost?**

6. **Identity property of multiplication**

7. **1,000,000 − 23,000 = *D***

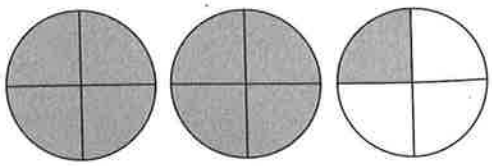
$$\begin{array}{r} 1{,}000{,}000 \\ -\ 23{,}000 \\ \hline 977{,}000 \end{array}$$

Nine hundred seventy-seven thousand

8. (a) $2 - 3 = -1$

(b) $\frac{1}{2} > \frac{1}{3}$

9. $\overline{PQ}$ (or $\overline{QP}$), $\overline{QR}$ (or $\overline{RQ}$), $\overline{PR}$ (or $\overline{RP}$)

10. 

11. (a) $\frac{3}{4}$

(b) 100% ÷ 4 = 25%
25% × 1 = **25%**

12. **1, 2, 4, 5, 10, 20, 25, 50, 100**

13. $15\overline{)630}$ → 42

$$\begin{array}{r} 60 \\ \hline 30 \\ 30 \\ \hline 0 \end{array}$$

x = **42**

14. $$\begin{array}{r} 3601 \\ +\ 2714 \\ \hline 6315 \end{array}$$

y = **6315**

15. $$\begin{array}{r} 2900 \\ -\ 64 \\ \hline 2836 \end{array}$$

p = **2836**

16. $$\begin{array}{r} \$5.00 \\ -\ \$1.53 \\ \hline \$3.47 \end{array}$$

q = **$3.47**

17. $20\overline{)1200}$ → 60

$$\begin{array}{r} 120 \\ \hline 00 \\ 0 \\ \hline 0 \end{array}$$

r = **60**

18. $$\begin{array}{r} 16 \\ \times\ 14 \\ \hline 64 \\ 160 \\ \hline 224 \end{array}$$

m = **224**

19. $$\begin{array}{r} 72{,}112 \\ -\ 64{,}309 \\ \hline 7\,803 \end{array}$$

20. $\begin{array}{r} 453{,}978 \\ +\ 386{,}864 \\ \hline \mathbf{840{,}842} \end{array}$

21. $\frac{8}{9} - \left(\frac{3}{9} + \frac{5}{9}\right) = \frac{8}{9} - \left(\frac{8}{9}\right) = \mathbf{0}$

22. $\left(\frac{8}{9} - \frac{3}{9}\right) + \frac{5}{9} = \left(\frac{5}{9}\right) + \frac{5}{9} = \frac{10}{9}$

$= \mathbf{1\frac{1}{9}}$

23. $\frac{9}{2} \times \frac{3}{5} = \frac{27}{10} = \mathbf{2\frac{7}{10}}$

24. $\begin{array}{r} \mathbf{\$2.48} \\ 15\overline{)\$37.20} \\ 30 \\ \hline 72 \\ 60 \\ \hline 120 \\ 120 \\ \hline 0 \end{array}$

25. $\begin{array}{r} 4760 \\ 9\overline{)42{,}847} \\ 36 \\ \hline 68 \\ 63 \\ \hline 54 \\ 54 \\ \hline 07 \\ 0 \\ \hline 7 \end{array}$

$\mathbf{4760\frac{7}{9}}$

26. $\begin{array}{r} \$4.36 \\ \$15.96 \\ \$0.76 \\ +\ \$35.00 \\ \hline \mathbf{\$56.08} \end{array}$

27. $\frac{3}{4} + \frac{1}{4} = \frac{4}{4} = 1$

$\frac{4}{4} + \frac{1}{4} = \frac{5}{4} = 1\frac{1}{4}$

$\frac{5}{4} + \frac{1}{4} = \frac{6}{4} = \frac{3}{2}$

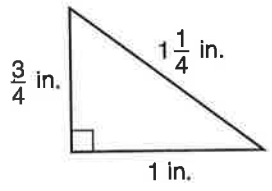
$\mathbf{1,\ 1\frac{1}{4},\ \frac{3}{2}}$

28. $\mathbf{\frac{3}{2}}$

29. $1\frac{2}{3} = \frac{3 \times 1 + 2}{3} = \frac{5}{3}$

$\frac{5}{3} \times \frac{1}{2} = \mathbf{\frac{5}{6}}$

30. $\mathbf{1\frac{1}{4}}$ **in.**



Lesson 13, Lesson Practice

a. $24 \times 18¢ = M$

$\begin{array}{r} \$0.18 \\ \times\quad 24 \\ \hline 72 \\ 36 \\ \hline \$4.32 \end{array}$ **$4.32**

b. $R \times 25 = 375$

$\begin{array}{r} 15 \\ 25\overline{)375} \\ 25 \\ \hline 125 \\ 125 \\ \hline 0 \end{array}$ $15 \times 25 = 375$ check

15 rows

c. $7P = 1225$

$\begin{array}{r} 175 \\ 7\overline{)1225} \\ 7 \\ \hline 52 \\ 49 \\ \hline 35 \\ 35 \\ \hline 0 \end{array}$ $7 \times 175 = 1225$ check

175 push-ups

d. **Answers will vary. See student work. Sample answer: If a dozen doughnuts cost $3.00, what is the cost per doughnut?**

Lesson 13, Mixed Practice

1. $72{,}112 - 64{,}309 = I$

$\begin{array}{r} 72{,}112 \\ -\ 64{,}309 \\ \hline \mathbf{7\,803} \end{array}$

2. $60 - N = 17$

60 night crawlers
$-$ 17 night crawlers
43 night crawlers

3. $1945 - B = 63$

$$\begin{array}{r} 1945 \\ -\ 63 \\ \hline 1882 \end{array}$$

4. $75 \times 12 = B$

$$\begin{array}{r} 75 \\ \times\ 12 \\ \hline 150 \\ 75 \\ \hline 900 \end{array}$$

900 beach balls

5. $T \times 8 = 120$

$$\begin{array}{r} 15 \\ 8\overline{)120} \\ 8 \\ \hline 40 \\ 40 \\ \hline 0 \end{array}$$

$15 \times 8 = 120$ check

15 truckloads

6. **Answers will vary. See student work. Sample answer: Five tickets for the show cost $63.75. If all the tickets were the same price, then what was the cost per ticket?**

$$\begin{array}{r} \$12.75 \\ 5\overline{)\$63.75} \\ 5 \\ \hline 13 \\ 10 \\ \hline 37 \\ 35 \\ \hline 25 \\ 25 \\ \hline 0 \end{array}$$

$5(\$12.75) = \$63.75$ check

$12.75

7. $(5 \times 8) - (5 + 8) = 40 - 13 = \mathbf{27}$

8. (a) $\dfrac{3 \text{ quarters}}{4 \text{ quarters}} = \mathbf{\dfrac{3}{4}}$

(b) $\dfrac{75¢}{100¢} = \mathbf{75\%}$

9. **10 units**

10. (a) **Line; $\overleftrightarrow{BR}$** (or $\overleftrightarrow{RB}$)

(b) **Segment; $\overline{TV}$** (or $\overline{VT}$)

(c) **Ray; $\overrightarrow{MW}$**

11. (a) Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24
Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36
1, 2, 3, 4, 6, 12

(b) **12**

12. (a) A: $\mathbf{\frac{6}{7}}$; B: $\mathbf{1\frac{4}{7}}$

(b) $1\frac{4}{7} - \frac{6}{7} = \frac{7 \times 1 + 4}{7} - \frac{6}{7}$

$= \frac{11}{7} - \frac{6}{7} = \mathbf{\frac{5}{7}}$ **units**

13.
$$\begin{array}{r} 50 \\ 36\overline{)1800} \\ 180 \\ \hline 00 \\ 0 \\ \hline 0 \end{array}$$

$c = \mathbf{50}$

14.
$$\begin{array}{r} \$3.77 \\ +\ \$1.64 \\ \hline \$5.41 \end{array}$$

$f = \mathbf{\$5.41}$

15.
$$\begin{array}{r} 28 \\ \times\ 7 \\ \hline 196 \end{array}$$

$d = \mathbf{196}$

16.
$$\begin{array}{r} 150 \\ 30\overline{)4500} \\ 30 \\ \hline 150 \\ 150 \\ \hline 00 \\ 0 \\ \hline 0 \end{array}$$

$e = \mathbf{150}$

17.
$$\begin{array}{r} 4 \\ 7 \\ 6 \\ 8 \\ 4 \\ 5 \\ 5 \\ 7 \\ 9 \\ 6 \\ +\ 8 \\ \hline 69 \end{array} \qquad \begin{array}{r} 75 \\ -\ 69 \\ \hline 6 \end{array}$$

$n = \mathbf{6}$

18.
$$\begin{array}{r} 3674 \\ -\ 2159 \\ \hline 1515 \end{array}$$

$a = \mathbf{1515}$

19.
$$\begin{array}{r} 5179 \\ -\ 4610 \\ \hline 569 \end{array}$$

$b = \mathbf{569}$

20.
$$\begin{array}{r} 363 \\ 4579 \\ 86 \\ +\ 7 \\ \hline \mathbf{5035} \end{array}$$

21. $(5 \cdot 4) \div (3 + 2) = (20) \div (5) = \mathbf{4}$

22. $\frac{5}{3} \cdot \frac{5}{2} = \frac{25}{6} = \mathbf{4\frac{1}{6}}$

23. $3\frac{4}{5} - \left(\frac{2}{5} + 1\frac{1}{5}\right)$

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

$$= \frac{19}{5} - \left(\frac{2}{5} + \frac{6}{5}\right) = \frac{19}{5} - \left(\frac{8}{5}\right)$$

$$= \frac{11}{5} = \mathbf{2\frac{1}{5}}$$

24.
$$\begin{array}{r} \mathbf{24} \\ 25\overline{)600} \\ \underline{50} \\ 100 \\ \underline{100} \\ 0 \end{array}$$

25.
$$\begin{array}{r} 600 \\ \times\ 25 \\ \hline 3000 \\ 1200 \\ \hline \mathbf{15{,}000} \end{array}$$

26. $100 \div 10 = 10$, $1000 \div 10 = 100$
$1000 \div 100 = 10$, $10 \div 10 = 1$
$100 > 1$
$1000 \div (100 \div 10) > (1000 \div 100) \div 10$

27. $2\frac{1}{2} = \frac{2 \times 2 + 1}{2} = \frac{5}{2}$

$\frac{5}{2} \cdot \frac{1}{3} = \mathbf{\frac{5}{6}}$

28. $\frac{11}{12} \cdot \frac{12}{11} = \mathbf{1}$

29. Obtuse: $\angle D$
Acute: $\angle A$
Right: $\angle B$ and $\angle C$

30. (a) $\overline{DC}$ (or $\overline{CD}$)
(b) $\overline{CB}$ (or $\overline{BC}$)

LESSON 14, LESSON PRACTICE

a. $\mathbf{39\% + N = 100\%}$

$100\% - 39\% = 61\%$

$39\% + 61\% = 100\%$ check

61%

b. $\mathbf{\frac{2}{5} + S = \frac{5}{5}}$

$\frac{5}{5}$ $\frac{2}{5}$ pioneers did not survive

$-\ \frac{2}{5}$ $+\ \frac{3}{5}$ pioneers survived

$\frac{3}{5}$ $\frac{5}{5}$ total pioneers check

$\mathbf{\frac{3}{5}}$

c. **Answers will vary. See student work. Sample answer: If 45% of the students were boys, then what percent of the students were girls?**

LESSON 14, MIXED PRACTICE

1. $65 + C = 142$

$$\begin{array}{r} 142 \\ -\ 65 \\ \hline 77 \end{array} \longrightarrow \begin{array}{r} 65 \text{ grams} \\ +\ 77 \text{ grams} \\ \hline 142 \text{ grams} \end{array}$$ check

77 grams

2. $\frac{7}{10} + W = \frac{10}{10}$

$$\begin{array}{r} \frac{10}{10} \\ -\ \frac{7}{10} \\ \hline \frac{3}{10} \end{array} \longrightarrow \begin{array}{l} \frac{3}{10} \text{ recruits liked haircut} \\ +\ \frac{7}{10} \text{ recruits did not like haircut} \\ \hline \frac{10}{10} \text{ total recruits} \end{array}$$ check

$\frac{3}{10}$

3. $1789 - 1776 = Y$

$$\begin{array}{r} 1789 \\ -\ 1776 \\ \hline 13 \end{array} \longrightarrow \begin{array}{r} 1776 \\ +\ 13 \\ \hline 1789 \end{array}$$ check

13 years

4. **Answers will vary. See student work. Sample answer: If a dozen flavored icicles cost $2.40, then what is the cost per flavored icicle?**

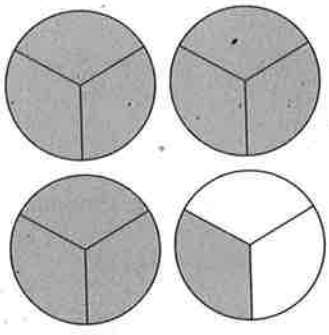
5. $24\% + N_A = 100\%$

$100\% - 24\% = 76\%$

$24\% + 76\% = 100\%$ check

76%

6.



7. **407,042,603**

8. **Property of zero for multiplication**

9. (a) Factors of 40: 1, 2, 4, 5, 8, 10, 20, 40

Factors of 72: 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72

1, 2, 4, 8

(b) **8**

10. $\overline{XY}$ (or $\overline{YX}$), $\overline{WX}$ (or $\overline{XW}$), $\overline{WY}$ (or $\overline{YW}$)

11. **Count the number in the group, which is 12. Use this as the denominator. Count the number that are shaded, which is 5. Use this as the numerator $\frac{5}{12}$.**

12.
$$\begin{array}{r} 623 \\ +\ 407 \\ \hline 1030 \end{array}$$
$b = \mathbf{1030}$

13.
$$\begin{array}{r} \$20.00 \\ -\ \$3.47 \\ \hline \$16.53 \end{array}$$
$e = \mathbf{\$16.53}$

14.
$$\begin{array}{r} 202 \\ 35\overline{)7070} \\ \underline{70} \\ 07 \\ \underline{0} \\ 70 \\ \underline{70} \\ 0 \end{array}$$
$f = \mathbf{202}$

15.
$$\begin{array}{r} 25 \\ \times\ 25 \\ \hline 125 \\ \underline{50} \\ 625 \end{array}$$
$m = \mathbf{625}$

16.
$$\begin{array}{r} 5 \\ 8 \\ 7 \\ 6 \\ 5 \\ 9 \\ 4 \\ 3 \\ 6 \\ 4 \\ 7 \\ 8 \\ 5 \\ +\ 6 \\ \hline 83 \end{array} \qquad \begin{array}{r} 89 \\ -\ 83 \\ \hline 6 \end{array}$$
$n = \mathbf{6}$

17.
$$\begin{array}{r} 1000 \\ -\ 295 \\ \hline 705 \end{array}$$
$a = \mathbf{705}$

18. $3\frac{3}{5} + 2\frac{4}{5} = \frac{18}{5} + \frac{14}{5}$

$= \frac{32}{5} = \mathbf{6\frac{2}{5}}$

19. $\frac{5}{2} \cdot \frac{3}{2} = \frac{15}{4} = \mathbf{3\frac{3}{4}}$

20.
$$\begin{array}{r} \$3.63 \\ \$0.87 \\ +\ \$0.96 \\ \hline \mathbf{\$5.46} \end{array}$$

21. $5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = 20 \cdot 3 \cdot 2 \cdot 1$
$= 60 \cdot 2 \cdot 1 = 120 \cdot 1 = \mathbf{120}$

22. $\mathbf{\frac{8}{27}}$

23.
$$\begin{array}{r} \mathbf{45} \\ 20\overline{)900} \\ \underline{80} \\ 100 \\ \underline{100} \\ 0 \end{array}$$

24.
$$\begin{array}{r} 145 \\ \times\ 74 \\ \hline 580 \\ \underline{1015} \\ \mathbf{10{,}730} \end{array}$$

25.
$$\begin{array}{r} \$0.65 \\ \times\ 30 \\ \hline \mathbf{\$19.50} \end{array}$$

26. $(5)(5 + 5) = 5(10) = \mathbf{50}$

27.
$$\begin{array}{r} 13{,}456 \\ -\ 9714 \\ \hline 3742 \end{array} \qquad \mathbf{-3742}$$

28. $1000 - 100 = 900,\ 900 - 10 = 890$
$100 - 10 = 90,\ 1000 - 90 = 910$
$890 < 910$
$(1000 - 100) - 10 < 1000 - (100 - 10)$

29. (a) **Right angle**

(b) **Straight angle**

(c) **Obtuse angle**

30. $\mathbf{\frac{5}{4}}$

LESSON 15, LESSON PRACTICE

a. $\frac{3}{4} \times \frac{5}{5} = \mathbf{\frac{15}{20}}$
$\frac{3}{4} \times \frac{7}{7} = \mathbf{\frac{21}{28}}$
$\frac{3}{4} \times \frac{3}{3} = \mathbf{\frac{9}{12}}$

b. $\frac{3}{4} \times \frac{4}{4} = \mathbf{\frac{12}{16}}$

c. $\frac{4}{5} \times \frac{4}{4} = \mathbf{\frac{16}{20}}$

d. $\frac{3}{8} \times \frac{3}{3} = \mathbf{\frac{9}{24}}$

e.
$$\begin{array}{r} \frac{3}{5} \times \frac{2}{2} = \frac{6}{10} \\ -\ \frac{1}{2} \times \frac{5}{5} = \frac{5}{10} \\ \hline \mathbf{\frac{1}{10}} \end{array}$$

f. $\frac{3}{6} = \frac{3 \div 3}{6 \div 3} = \mathbf{\frac{1}{2}}$

g. $\frac{8}{10} = \frac{8 \div 2}{10 \div 2} = \mathbf{\frac{4}{5}}$

h. $\frac{8}{16} = \frac{8 \div 8}{16 \div 8} = \mathbf{\frac{1}{2}}$

i. $\frac{12}{16} = \frac{12 \div 4}{16 \div 4} = \mathbf{\frac{3}{4}}$

j. $\frac{4}{8} = \frac{4 \div 4}{8 \div 4} = \frac{1}{2},\ 4\frac{4}{8} = \mathbf{4\frac{1}{2}}$

k. $\frac{9}{12} = \frac{9 \div 3}{12 \div 3} = \frac{3}{4}$, $6\frac{9}{12} = \mathbf{6\frac{3}{4}}$

l. $\mathbf{12\frac{8}{15}}$

m. $\frac{16}{24} = \frac{16 \div 8}{24 \div 8} = \frac{2}{3}$, $8\frac{16}{24} = \mathbf{8\frac{2}{3}}$

n. $\frac{5}{12} + \frac{5}{12} = \frac{10}{12} = \frac{10 \div 2}{12 \div 2} = \mathbf{\frac{5}{6}}$

o. $3\frac{7}{10} - 1\frac{1}{10} = 2\frac{6}{10}$

$\frac{6}{10} = \frac{6 \div 2}{10 \div 2} = \frac{3}{5}$, $\mathbf{2\frac{6}{10} = 2\frac{3}{5}}$

p. $\frac{5}{8} \cdot \frac{2}{3} = \frac{10}{24} = \frac{10 \div 2}{24 \div 2} = \mathbf{\frac{5}{12}}$

q. $90\% = \frac{90}{100}$

$\frac{90}{100} \div \frac{10}{10} = \mathbf{\frac{9}{10}}$

r. $75\% = \frac{75}{100}$

$\frac{75}{100} \div \frac{25}{25} = \mathbf{\frac{3}{4}}$

s. $5\% = \frac{5}{100}$

$\frac{5}{100} \div \frac{5}{5} = \mathbf{\frac{1}{20}}$

t. $\frac{2}{3} \cdot \frac{2}{2} = \frac{4}{6}$

$\frac{4}{6} - \frac{1}{6} = \frac{3}{6} = \frac{3 \div 3}{6 \div 3} = \mathbf{\frac{1}{2}}$

LESSON 15, MIXED PRACTICE

1. $\mathbf{1998 - B = 75}$

$$\begin{array}{r} 1998 \\ -\ 75 \\ \hline \mathbf{1923} \end{array}$$

2. $\mathbf{27 + 38 + 56 = T}$

$$\begin{array}{r} 27 \text{ geese} \\ 38 \text{ geese} \\ +\ 56 \text{ geese} \\ \hline \mathbf{121 \text{ geese}} \end{array}$$

3. $40\% = \frac{40}{100}$

$\frac{40}{100} \div \frac{20}{20} = \mathbf{\frac{2}{5}}$

4. $\mathbf{60C = 9000}$

$$\begin{array}{r} 150 \\ 60\overline{)9000} \\ 60 \\ \hline 300 \\ 300 \\ \hline 00 \\ 0 \\ \hline 0 \end{array}$$

150 bushels

5. $2\frac{1}{2}\text{in.} - 1\frac{7}{8}\text{in.} = \frac{5}{2}\text{in.} - \frac{15}{8}\text{in.}$

$= \frac{20}{8}\text{in.} - \frac{15}{8}\text{in.} = \mathbf{\frac{5}{8}\text{ in.}}$

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6. $\mathbf{3 \cdot 5 > 3 + 5}$

7.
$$\begin{array}{r} 12 \\ 8\overline{)100} \\ 8 \\ \hline 20 \\ 16 \\ \hline 4 \\ 0 \\ \hline 4 \end{array}$$

8. (a) $\frac{6}{8} = \frac{6 \div 2}{8 \div 2} = \mathbf{\frac{3}{4}}$

(b) $\frac{6}{10} = \frac{6 \div 2}{10 \div 2} = \frac{3}{5}$, $2\frac{6}{10} = \mathbf{2\frac{3}{5}}$

9. $\frac{2}{3} \cdot \frac{3}{3} = \mathbf{\frac{6}{9}}$

$\frac{2}{3} \cdot \frac{5}{5} = \mathbf{\frac{10}{15}}$

$\frac{2}{3} \cdot \frac{6}{6} = \mathbf{\frac{12}{18}}$

10. (a) $\frac{3}{5} \cdot \frac{4}{4} = \mathbf{\frac{12}{20}}$

(b) $\frac{1}{2} \cdot \frac{10}{10} = \mathbf{\frac{10}{20}}$

(c) $\frac{3}{4} \cdot \frac{5}{5} = \mathbf{\frac{15}{20}}$

11. (a) $\overleftrightarrow{QS}$ or $\overleftrightarrow{QR}$ or $\overleftrightarrow{RS}$ (or $\overleftrightarrow{SQ}$ or $\overleftrightarrow{RQ}$ or $\overleftrightarrow{SR}$)

(b) $\overrightarrow{RT}, \overrightarrow{RQ}, \overrightarrow{RS}$

(c) $\angle TRS$ or $\angle SRT$

12. (a) $\mathbf{3\frac{2}{3}}$

(b) $\frac{12}{3} = \frac{12 \div 3}{3 \div 3} = \frac{4}{1} = \mathbf{4}$

(c) $\mathbf{4\frac{1}{3}}$

13.
$$11(6 + 7) = 11(13) = 143$$
$$66 + 77 = 143$$
$$143 = 143$$
$$(11)(6 + 7) = 66 + 77$$

14.
$$\begin{array}{r} 50 \\ -\ 39 \\ \hline 11 \end{array}$$
$b = \mathbf{11}$

15.
$$\begin{array}{r} 50 \\ 6\overline{)300} \\ \underline{30} \\ 00 \\ \underline{0} \\ 0 \end{array}$$
$a = \mathbf{50}$

16.
$$\begin{array}{r} \$5.00 \\ +\ \$0.05 \\ \hline \$5.05 \end{array}$$
$c = \mathbf{\$5.05}$

17.
$$\begin{array}{r} 35 \\ \times\ 35 \\ \hline 175 \\ \underline{105} \\ 1225 \end{array}$$
$w = \mathbf{1225}$

18. $80\% = \frac{80}{100}$

$\frac{80}{100} \div \frac{20}{20} = \mathbf{\frac{4}{5}}$

19. $35\% = \frac{35}{100}$

$\frac{35}{100} \div \frac{5}{5} = \mathbf{\frac{7}{20}}$

20. **8**

21. $\frac{2}{5} + \frac{3}{5} + \frac{4}{5} = \frac{9}{5} = \mathbf{1\frac{4}{5}}$

22. $3\frac{5}{8} - 1\frac{3}{8} = 2\frac{2}{8} = \mathbf{2\frac{1}{4}}$

23. $\frac{4}{3} \cdot \frac{3}{4} = \frac{12}{12} = \mathbf{1}$

24. $\frac{3}{4} + \frac{3}{4} = \frac{6}{4} = 1\frac{2}{4} = \mathbf{1\frac{1}{2}}$

25. $\frac{7}{5} + \frac{8}{5} = \frac{15}{5} = \mathbf{3}$

26. $\frac{11}{12} - \frac{1}{12} = \frac{10}{12}$

$\frac{10 \div 2}{12 \div 2} = \mathbf{\frac{5}{6}}$

27. $\frac{5}{6} \cdot \frac{2}{3} = \frac{10}{18}$

$\frac{10 \div 2}{18 \div 2} = \mathbf{\frac{5}{9}}$

28. (a) $\frac{4}{8} + \frac{4}{8} = \frac{8}{8} = \mathbf{1}$

(b) $\frac{4}{8} - \frac{4}{8} = \frac{0}{8} = \mathbf{0}$

29. $\frac{1}{3} \cdot \frac{2}{2} = \frac{2}{6}$

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

30. $2\frac{2}{3} = \frac{8}{3}$

$\frac{8}{3} \cdot \frac{1}{4} = \frac{8}{12}$

$\frac{8 \div 4}{12 \div 4} = \mathbf{\frac{2}{3}}$