Lesson Practice 21

a. $4 \cdot 12 = t$;

We multiply to find the missing number.

$4 \times 12 =$ **48 eggs**

b. $6n = 30$;

We find the missing number by dividing.

$30 \div 6 =$ **5 desks**

c. $7y = 21$;

We find the missing number by dividing.

$21 \div 7 =$ **3 piles**

d. $7n = 56$;

We find the missing number by dividing.

$56 \div 7 =$ **8 zebras**

e. See student work;

$$\begin{array}{r} {\scriptstyle 4\ 3} \\ \$0.75 \\ \times \quad 6 \\ \hline \$4.50 \end{array}$$

Written Practice 21

1. $8p = 56$;

We find the missing number by dividing.

$56 \div 8 =$ **7 students**

2. $32 - 8 = t$; 24 ounces

3. $\$487 + m = \$800$

$$\begin{array}{r} {\scriptstyle 7\ 9\ 1} \\ \$8\not{0}\not{0} \\ -\ \$487 \\ \hline \$313 \end{array}$$

4.

5. $6 \times 7 = 42$, $7 \times 6 = 42$, $42 \div 6 = 7$, $42 \div 7 = 6$

6. 9

7. Recall the multiplication facts, since $6 \times 7 = 42$, we know the missing factor is **7.**

8. 4

9. Recall the multiplication facts, since $6 \times 8 = 48$, we know the missing factor is **8.**

10. 8

11. 7

12. $6 > 5$

13.
$$\begin{array}{r} {\scriptstyle 5\ 5} \\ 367 \\ \times \quad 8 \\ \hline 2936 \end{array}$$

14.
$$\begin{array}{r} {\scriptstyle 2} \\ \$5.04 \\ \times \quad 7 \\ \hline \$35.28 \end{array}$$

15.
$$\begin{array}{r} {\scriptstyle 3\ 6} \\ 837 \\ \times \quad 9 \\ \hline 7533 \end{array}$$

16. $6 \times 8 \times 10$

$48 \times 10 =$ **480**

17. $7 \times 20 \times 4$

$7 \times 80 =$ **560**

18.
$$\begin{array}{r} {\scriptstyle 3\ 9\ 9\ 1} \\ \$4\not{0}.\not{0}0 \\ -\ \$29.34 \\ \hline \$10.66 \end{array}$$

19.
$$\begin{array}{r} {\scriptstyle 1} \\ 6318 \\ +\ 4568 \\ \hline 10{,}886 \end{array}$$

20.
$$\begin{array}{r} {\scriptstyle 4\ 9\ 9\ 1} \\ 5\not{0}\not{0}3 \\ -\ 876 \\ \hline 4127 \end{array}$$

21.
$$\begin{array}{r} {\scriptstyle 7\ 1} \\ 6\not{8}7 \\ -\ 268 \\ \hline 419 \end{array}$$

22.
$$\begin{array}{r} {\scriptstyle 1\ 1} \\ \$9.65 \\ \$2.43 \\ +\ \$1.45 \\ \hline \$13.53 \end{array}$$

23.
$$\begin{array}{r} {\scriptstyle 2\ 1} \\ 382 \\ 96 \\ +\ 182 \\ \hline 660 \end{array}$$

24. 6 items; sample: twelve divided by 2 is 6, so there are 6 items in each group.

25. This sequence counts up. We find that the rule for this sequence is "count up by tens." Counting up by tens from 90 gives us the next three terms: **100, 110, 120.**

26. **Ten divided by two**

27. **60**

28. **There were 60 books in all 5 boxes; $5 \times 12 = 60$**

29. **0.50; 50%**

30. a. **Attu; Virgin Islands (UK); 350 + 59 = 409 sq. mi.**

    b. **Attu and Cayman; 350 − 100 = 250**

    c. **Cayman, Tobago, and Virgin Islands (US); 100 + 116 + 134 = 350**

Early Finishers

$n \times 6 = 36$; $n = 36$

Lesson Practice 22

a. **4 R 3**
$5\overline{)23}$
-20
3

b. **8 R 2**
$6\overline{)50}$
-48
2

c. **4 R 5**
$8\overline{)37}$
-32
5

d. **5 R 3**
$4\overline{)23}$
-20
3

e. **7 R 1**
$7\overline{)50}$
-49
1

f. **6 R 4**
$6\overline{)40}$
-36
4

g. **4 R 2**
$10\overline{)42}$
-40
2

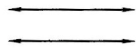
h. **5 R 5**
$9\overline{)50}$
-45
5

i. **3 R 7**
$9\overline{)34}$
-27
7

j. $5\overline{)44}$

k. **30 because 30 is the only even number in the list. Only even numbers can be divided by 2 without a remainder.**

Written Practice 22

1. 

2. $32 \div 8 =$ **4 gifts**

3. **$26 - 9 = m$; about 17 miles**

4. **Yes; sample: 618 is about 600, 384 is about 400, and the sum of 600 and 400 is 1000.**

5. **5 R 6**
$10\overline{)56}$
-50
6

6. **6 R 2**
$3\overline{)20}$
-18
2

7. **4 R 2**
$7\overline{)30}$
-28
2

8. $3 \times 7 \times 10$
$21 \times 10 =$ **210**

9. $2 \times 3 \times 4 \times 5$
$6 \times 20 =$ **120**

10. $\overset{73}{\$394}$
$\times \quad 8$
$3152

11.
$$\begin{array}{r} {\scriptstyle 3\,3}\\ 678\\ \times\quad 4\\ \hline \mathbf{2712} \end{array}$$

12.
$$\begin{array}{r} {\scriptstyle 4\quad 8}\\ \$6.49\\ \times\quad\ 9\\ \hline \mathbf{\$58.41} \end{array}$$

13. **9**

14. **7**

15. **7**

16.
$$\begin{array}{r} {\scriptstyle \quad\ 5}\\ \$4.08\\ \times\quad\ 7\\ \hline \mathbf{\$28.56} \end{array}$$

17.
$$\begin{array}{r} {\scriptstyle 3\,2\,3}\\ 3645\\ \times\quad\ 6\\ \hline \mathbf{21{,}870} \end{array}$$

18.
$$\begin{array}{r} {\scriptstyle 3\quad 1}\\ 3904\\ \times\quad\ 4\\ \hline \mathbf{15{,}616} \end{array}$$

19. $0 = 4n$

$0 = n$; n must equal zero because zero is the only number that can be multiplied by four to get a product of zero.

20.
$$\begin{array}{r} {\scriptstyle 1\,1}\\ 548\\ +462\\ \hline \mathbf{1010} \end{array}$$

21.
$$\begin{array}{r} {\scriptstyle 2\,1\,5\quad 1}\\ \$3\cancel{6}.15\\ -\$29.81\\ \hline \mathbf{\$\,6.34} \end{array}$$

22.
$$\begin{array}{r} {\scriptstyle 5\,9\,9\quad 1}\\ \cancel{6}\cancel{0}\cancel{0}0\\ -\ 963\\ \hline \mathbf{5037} \end{array}$$

23. **Twelve divided by four**

24. **No; when you multiply a number by 2, the product is an even number because 2 becomes a factor.**

25. This sequence counts down. The rule for this sequence is "count down by tens." Counting down by tens from 10 gives us the next three terms: **0, –10, –20.**

26. $10 - (3 \times 3) = 10 - 9 =$ **1 quarter or 25¢**

27. **>;** When comparing whole numbers with the same number of digits, we consider the value place by place. The digits in the thousands place are the same, but in the hundreds place, 2 is greater than 0. So we have the following: 46,208 > 46,028.

28. **two $\frac{1}{4}$ circles**

29. **a. 0.25**

b. 25%

30.
$$\begin{array}{r} \mathbf{7\ R\ 5}\\ 10\overline{)75}\\ -70\\ \hline 5 \end{array}$$

There will be 7 rows of ten and the last row will have the remainder, which is **5 chairs.**

Early Finishers

129 ÷ 9 = 14 R 3; sample: 15 adults will be needed because 126 students can be placed in 14 groups of 9 students and 1 group of 3 students.

Lesson Practice 23

a. **See student work.**

b. In each choice, the numerator is half the denominator, except for **B.**

c. **>;** The denominator of $\frac{5}{8}$ is 8, and half of 8 is 4. Since 5 is greater than half of 8, $\frac{5}{8}$ is greater than $\frac{1}{2}$. In the other fraction, $\frac{5}{12}$, the denominator is 12 and half of 12 is 6. Since 5 is less than half of 12, $\frac{5}{12}$ is less than $\frac{1}{2}$. This means that $\frac{5}{8} > \frac{5}{12}$.

d. **=;** $\frac{12}{24}$ equals $\frac{6}{12}$ because the numerator is half the denominator for both fractions. This means both fractions are equal to $\frac{1}{2}$.

Written Practice 23

1. **$5.00 – $3.48 = m;**
$$\begin{array}{r} {\scriptstyle 4\quad 9\quad 1}\\ \$\cancel{5}.\cancel{0}0\\ -\$3.48\\ \hline \mathbf{\$1.52} \end{array}$$

2. **$1.45 + $0.95 = t; $2.40; $1 + $1.50 = $2.50, and $2.50 is close to $2.40.**

3. $7 \times 52 = d$;

$$\begin{array}{r} {\scriptstyle 1}\\ 52\\ \times 7\\ \hline \textbf{364 days} \end{array}$$

4. **$3d = \$24$; \$8; sample: I found the missing factor by dividing 24 by 3.**

5. **a.** $20 \div 2 =$ **10 ounces**

b. $20 \div 4 =$ **5 ounces**

6. **<;** The denominator of $\frac{3}{10}$ is 10, half of 10 is 5. Since 3 is less than 5, $\frac{3}{10}$ is less than $\frac{1}{2}$. The other fraction, $\frac{3}{6}$, equals $\frac{1}{2}$. So $\frac{3}{10} < \frac{3}{6}$.

7.
$$\begin{array}{r} \textbf{6 R 4}\\ 6\overline{)40}\\ -36\\ \hline 4 \end{array}$$

8.
$$\begin{array}{r} \textbf{6 R 2}\\ 3\overline{)20}\\ -18\\ \hline 2 \end{array}$$

9. Recall the multiplication facts. Since $6 \times 10 = 60$, we know the missing factor is **6.**

10.
$$\begin{array}{r} {\scriptstyle 5}\\ \$3.08\\ \times \quad 7\\ \hline \textbf{\$21.56} \end{array}$$

11.
$$\begin{array}{r} {\scriptstyle 1\ 1}\\ 2514\\ \times \quad 3\\ \hline \textbf{7542} \end{array}$$

12.
$$\begin{array}{r} {\scriptstyle 7\ 5}\\ 697\\ \times \quad 8\\ \hline \textbf{5576} \end{array}$$

13. **Thirty-five divided by seven**

14. $4 \times 3 \times 10$

$12 \times 10 =$ **120**

15. $12 \times 2 \times 10$

$24 \times 10 =$ **240**

16.
$$\begin{array}{r} {\scriptstyle 3\ 9\ 12\ 1}\\ \cancel{4}\cancel{0}\cancel{2}5\\ -3587\\ \hline \textbf{448} \end{array}$$

17.
$$\begin{array}{r} {\scriptstyle 1\ 1}\\ 5694\\ +1056\\ \hline \textbf{6750} \end{array}$$

18.
$$\begin{array}{r} {\scriptstyle 6\ 9\ 9\ 1}\\ \$\cancel{7}\cancel{0}.\cancel{0}0\\ -\ 7.53\\ \hline \textbf{\$62.47} \end{array}$$

19.
$$\begin{array}{r} {\scriptstyle 1\ 1\ 1}\\ \$\ 5.00\\ \$\ 8.75\\ \$10.00\\ +\ \$\ 0.35\\ \hline \textbf{\$24.10} \end{array}$$

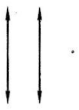
20.
$$\begin{array}{r} \$\ 6.25\\ \$\ 0.85\\ \$\ 4.00\\ +\quad d\\ \hline \$20.00 \end{array} \} \$11.10$$

$d = \$20.00 - \$11.10 =$ **\$8.90**

21. **$7 \times 9 = 63$, $9 \times 7 = 63$, $63 \div 7 = 9$, $63 \div 9 = 7$**

22. **52, 48, 16**

23.



24. **Two hundred twelve thousand, five hundred**

25. **$7 + 9 = 16$, $9 + 7 = 16$, $16 - 7 = 9$, $16 - 9 = 7$**

26. In each choice, the numerator is half of the denominator, except for **D.**

27. **0.75**

28.
$$\begin{array}{r} {\scriptstyle 2\ 4}\\ \$0.25\\ \times \quad 9\\ \hline \textbf{\$2.25} \end{array}$$

29. **See student work; sample:** $3 \times 12 = p$; $p =$ **36.**

30. The sequence is "count up by eights." The terms in the sequence are 8, 16, 24, 32, 40, 48, 56, 64, 72, and 80. The tenth term in the sequence is **80.**

Lesson Practice 24

a. $6 - (4 - 2)$
$6 - \quad 2 \quad = \mathbf{4}$

b. $(6 - 4) - 2$
$\quad 2 \quad - 2 = \mathbf{0}$

c. $(8 \div 4) \div 2$
$\quad 2 \quad \div 2 = \mathbf{1}$

d. $8 \div (4 \div 2)$
$8 \div \quad 2 \quad = \mathbf{4}$

e. $12 \div (4 - 1)$
$12 \div \quad 3 \quad = \mathbf{4}$

f. $(12 \div 4) - 1$
$\quad 3 \quad - 1 = \mathbf{2}$

g. **Addition, subtraction, multiplication, division**

h. $(8 \div 4) \div 2 \bigcirc 8 \div (4 \div 2)$
$2 \quad \div 2 \bigcirc 8 \div \quad 2$
$\mathbf{1 \quad < \quad 4}$

No, the Associative Property does not apply.

i. $(8 - 4) - 2 \bigcirc 8 - (4 - 2)$
$4 \quad - 2 \bigcirc 8 - \quad 2$
$\mathbf{2 \quad < \quad 6}$

No, the Associative Property does not apply.

j. $(8 \times 4) \times 2 \bigcirc 8 \times (4 \times 2)$
$32 \quad \times 2 \bigcirc 8 \times \quad 8$
$\mathbf{64 \quad = \quad 64}$

Yes, the Associative Property applies.

Written Practice 24

1. **One-half of a dollar is equal to 50¢, and one-fourth of a dollar is 25¢. $0.50 + $0.25 = $0.75**

2. Each horse has 4 horseshoes.

   $25 \times 4 = t = 100$ horseshoes

3. **$12 - e = 9$; $12 - 9 = 3$ eggs**

4. **$956 - s = 498$; 458 seats; sample: I subtracted 498 from 956 and got 458.**

5. **$5 \times 10 = 50$, $10 \times 5 = 50$, $50 \div 5 = 10$, $50 \div 10 = 5$**

6. $3 \times (4 + 5) \bigcirc (3 \times 4) + 5$
   $3 \times \quad 9 \quad \bigcirc \quad 12 \quad + 5$
   $\mathbf{27 \quad > \quad 17}$

7. $30 - (20 + 10)$
   $30 - \quad 30 \quad = \mathbf{0}$

8. $(30 - 20) + 10$
   $\quad 10 \quad + 10 = \mathbf{20}$

9. $4 \times (6 \times 5) \bigcirc (4 \times 6) \times 5$
   $4 \times \quad 30 \quad \bigcirc \quad 24 \quad \times 5$
   $\mathbf{120 \quad = \quad 120}$

10. $7\overline{)60}$ **R 4**
    -56
    4

11. $6\overline{)50}$ **R 2**
    -48
    2

12. $10\overline{)44}$ **R 4**
    -40
    4

13. $\overset{1\ 2}{\$50.36}$
    $\times \quad 4$
    $201.44

14. $\overset{2\ 4}{7408}$
    $\times \quad 6$
    44,448

15. $\overset{5\ 3\ 6}{4637}$
    $\times \quad 9$
    41,733

16. $\overset{1\quad 1}{\$14.08}$
    $+\$ \ 9.62$
    $23.70

17. $47\overset{21}{3}0$
    $- 2712$
    2018

18. $\begin{array}{r} {\scriptstyle 2\,9\,9_1} \\ \$\cancel{3}\cancel{0}.\cancel{0}0 \\ -\ \$\ 0.56 \\ \hline \$29.44 \end{array}$

19. $\begin{array}{r} {\scriptstyle 1\ 1} \\ \$\ 3.54 \\ \$12.00 \\ +\ \$\ 1.66 \\ \hline \$17.20 \end{array}$

20. $\begin{array}{r} {\scriptstyle 1\,9\,9_1} \\ \$\cancel{2}\cancel{0}.\cancel{0}0 \\ -\ \$16.45 \\ \hline \$\ 3.55 \end{array}$

21. **5 + 9 = 14, 9 + 5 = 14, 14 − 9 = 5, 14 − 5 = 9**

22. The hundreds place is the third digit from the right end of the number. The digit in this position is **2.**

23. $\begin{array}{r} {\scriptstyle 2} \\ \$35 \\ \times\ \ 4 \\ \hline \$140 \end{array}$

24. The sequence is "count up by threes." The terms in the sequence are 3, 6, 9, 12, 15, 18, 21, 24, and 30. The tenth term in the sequence is **30.**

25. **B;** 25 ÷ 5 = 5

26. 

27. **7 × 8 = 56, 8 × 7 = 56, 56 ÷ 8 = 7, 56 ÷ 7 = 8**

28. (8 + 4) + 2 ◯ 8 + (4 + 2)
12 + 2 ◯ 8 + 6
14 = 14
yes

29. **a.** 14 ÷ 2 = **7**

b. $\frac{7}{14}$

30. **A**

Early Finishers

9 × (5 × 6) = 270 items; sample: grouping the 5 and 6 and multiplying these numbers first allows mental computation to be used to solve the problem.

Lesson Practice 25

a. The factors of 4 are **1, 2, and 4.**

b. The factors of 3 are **1 and 3.**

c. The factors of 6 are **1, 2, 3, and 6.**

d. The factors of 5 are **1 and 5.**

e. The factors of 8 are **1, 2, 4 and 8.**

f. The factors of 11 are **1 and 11.**

g. The factors of 9 are **1, 3, and 9.**

h. The factors of 12 are **1, 2, 3, 4, 6, and 12.**

i. The factor of 1 is **1.**

j. The factors of 14 are **1, 2, 7, and 14.**

k. The factors of 2 are **1 and 2.**

l. The factors of 15 are **1, 3, 5, and 15.**

m. **D;** 263 is odd because when we look at the last digit, 3, this digit is odd.

n. **D;** we can see that 105, 150, and 510 are all divisible by 5. The only choice that is not a factor of 5 is 501 because this would leave a remainder.

o. We see that 40 is an even number ending in zero, so 2 and 10 are factors. We also quickly see that 40 can be divided by 5 without a remainder. The only choice that is not a factor of 40 is **C.**

Written Practice 25

1. **9 × 24 = *t*;** $\begin{array}{r} {\scriptstyle 3} \\ 24 \\ \times\ \ 9 \\ \hline 216 \text{ trees} \end{array}$

2. **$10 − $6.75 = *m*; sample: my answer is reasonable because $3.25 + $6.75 = $10.**

3. **4 × $1.12 = *c*; $4.48**

4. The factors of 13 are **1 and 13.**

5. The factors of 10 are 1, 2, 5, and 10.

The factors of 30 are 1, 2, 3, 5, 6, 10, 15, and 30.

The common factors of 10 and 30 are **1, 2, 5, and 10.**

6. $4 \times (6 \times 10) \bigcirc (4 \times 6) \times 10$
$4 \times 60 \bigcirc 24 \times 10$
240 = 240

7. Associative Property

8. $6 \times (7 + 8)$
$6 \times 15 = \mathbf{90}$

9. $(6 \times 7) + 8$
$42 + 8 = \mathbf{50}$

10. $10 \times 12 = 120$, $12 \times 10 = 120$, $120 \div 10 = 12$, $120 \div 12 = 10$

11. Recall the multiplication facts, since $9 \times 6 = 54$, we know the missing factor is **6.**

12.
$$\begin{array}{r} \mathbf{6\ R\ 7} \\ 8\overline{)55} \\ \underline{-48} \\ 7 \end{array}$$

13.
$$\begin{array}{r} {\scriptstyle 1\,1\,2} \\ 1234 \\ \times\quad 5 \\ \hline \mathbf{6170} \end{array}$$

14.
$$\begin{array}{r} {\scriptstyle 5\ 5} \\ \$5.67 \\ \times\quad 8 \\ \hline \mathbf{\$45.36} \end{array}$$

15.
$$\begin{array}{r} {\scriptstyle 5\,4} \\ 987 \\ \times\quad 6 \\ \hline \mathbf{5922} \end{array}$$

16.
$$\begin{array}{r} \$13.55 \\ +\$\ 5.00 \\ \hline \mathbf{\$18.55} \end{array}$$

17.
$$\begin{array}{r} {\scriptstyle 1\,9\,9_1} \\ 2\cancel{0}\cancel{0}1 \\ -1002 \\ \hline \mathbf{999} \end{array}$$

18.
$$\begin{array}{r} {\scriptstyle 2\,1} \\ 4387 \\ 124 \\ +\quad 96 \\ \hline \mathbf{4607} \end{array}$$

19.
$$\begin{array}{r} {\scriptstyle 2\,1\,1} \\ 3715 \\ 987 \\ +\ 850 \\ \hline \mathbf{5552} \end{array}$$

20.
$$\begin{array}{r} \$6.75 \\ \$8.00 \\ \$1.36 \\ +\quad P \\ \hline \$20.00 \end{array} \Big\} \$16.11$$

Find the missing addend by subtracting the sum of the known addends from the total sum.

$$\begin{array}{r} {\scriptstyle 1\,9\,9_1} \\ \$2\cancel{0}.\cancel{0}0 \\ -\ \$16.11 \\ \hline \mathbf{\$3.89} \end{array}$$

21. $\frac{1}{2}$ of a dollar is equal to $100¢ \div 2 = 50¢$.

$\frac{1}{4}$ of a dollar is equal to $100¢ \div 4 = 25¢$.

$\frac{1}{10}$ of a dollar is equal to $100¢ \div 10 = 10¢$.

$$\begin{array}{r} \$0.50 \\ \$0.25 \\ +\ \$0.10 \\ \hline \mathbf{\$0.85} \end{array}$$

22. Eight hundred ninety-four thousand, two hundred one

23. 6

24. The sequence is "count up by fives." The terms in the sequence are 5, 10, 15, 20, 25, 30, 35, 40, 45, and 50. The tenth term in the sequence is **50.**

25. Even; any whole number that is multiplied by 2 will always result in an even number.

26. B; We see that 654 and 564 are even numbers ending in four, so this can be divided into 2 without a remainder. We also quickly see that 456 can be divided by 2 without a remainder. The only choice that is not a factor of 2 is **B.**

27. Associative Property

28. Sample: $2 \times 4 \times 3 = 24$

29. 0.1

30. a. **The rule is: Multiply the number of yards by 3.**

b. **60 feet;** 3 feet in each yard multiplied by 20 yards = 60 feet

Lesson Practice 26

a. **$1.39**

$$\begin{array}{r} \$1.39 \\ 4\overline{)\$5.56} \\ -4 \\ \hline 15 \\ -12 \\ \hline 36 \\ -36 \\ \hline 0 \end{array}$$

b. **41 R 6**

$$\begin{array}{r} 41\text{ R }6 \\ 9\overline{)375} \\ -36 \\ \hline 15 \\ -9 \\ \hline 6 \end{array}$$

c. **$1.55**

$$\begin{array}{r} \$1.55 \\ 3\overline{)\$4.65} \\ -3 \\ \hline 16 \\ -15 \\ \hline 15 \\ -15 \\ \hline 0 \end{array}$$

d. **129**

$$\begin{array}{r} 129 \\ 5\overline{)645} \\ -5 \\ \hline 14 \\ -10 \\ \hline 45 \\ -45 \\ \hline 0 \end{array}$$

e. **$0.52**

$$\begin{array}{r} \$0.52 \\ 7\overline{)\$3.64} \\ -35 \\ \hline 14 \\ -14 \\ \hline 0 \end{array}$$

f. **52 R 1**

$$\begin{array}{r} 52\text{ R }1 \\ 7\overline{)365} \\ -35 \\ \hline 15 \\ -14 \\ \hline 1 \end{array}$$

g. **54 R 6**

$$\begin{array}{r} 54\text{ R }6 \\ 10\overline{)546} \\ -50 \\ \hline 46 \\ -40 \\ \hline 6 \end{array}$$

h. **$1.14**

$$\begin{array}{r} \$1.14 \\ 4\overline{)\$4.56} \\ -4 \\ \hline 05 \\ -4 \\ \hline 16 \\ -16 \\ \hline 0 \end{array}$$

i. **75**

$$\begin{array}{r} {\scriptstyle 1} \\ 12 \\ \times\ 6 \\ \hline 72 \\ +\ 3 \\ \hline 75 \end{array}$$

j. **17**

$$\begin{array}{r} 17 \\ 3\overline{)51} \\ -3 \\ \hline 21 \\ -21 \\ \hline 0 \end{array}$$

k. **23**

$$\begin{array}{r} 23 \\ 4\overline{)92} \\ -8 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

l. **42**

$$\begin{array}{r} 42 \\ 6\overline{)252} \\ -24 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

Written Practice 26

1. **$5.00 − $2.98 = *m*;**

$$\begin{array}{r} {\scriptstyle 4\ 9,} \\ \$5.00 \\ -\ \$2.98 \\ \hline \$2.02 \end{array}$$

2. **3 × 12 = *t*; 36 muffins**

3. **$s + 3 = 28$; sample: 25 students; I subtracted 3 from 28 and got 25.**

4. a. 10

b. $10 \div 2 = \mathbf{5}$

c. $\frac{\mathbf{5}}{\mathbf{10}}$

5. The factors of 8 are 1, 2, 4, and 8.

The factors of 16 are 1, 2, 4, 8, and 16.

The factors of 8 and 16 are **1, 2, 4, and 8.**

6.
$$\begin{array}{r} \mathbf{75} \\ 5\overline{)375} \\ -35 \\ \hline 25 \\ -25 \\ \hline 0 \end{array}$$

7.
$$\begin{array}{r} \mathbf{91\ R\ 1} \\ 4\overline{)365} \\ -36 \\ \hline 05 \\ -4 \\ \hline 1 \end{array}$$

8.
$$\begin{array}{r} \mathbf{39} \\ 6\overline{)234} \\ -18 \\ \hline 54 \\ -54 \\ \hline 0 \end{array}$$

9.
$$\begin{array}{r} \mathbf{\$0.72} \\ 6\overline{)\$4.32} \\ -42 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

10.
$$\begin{array}{r} \mathbf{41} \\ 3\overline{)123} \\ -12 \\ \hline 03 \\ -3 \\ \hline 0 \end{array}$$

11.
$$\begin{array}{r} \mathbf{96} \\ 6\overline{)576} \\ -54 \\ \hline 36 \\ -36 \\ \hline 0 \end{array}$$

12.
$$\begin{array}{r} {\scriptstyle 1\ 3} \\ \$7.48 \\ \times\quad 4 \\ \hline \mathbf{\$29.92} \end{array}$$

13.
$$\begin{array}{r} {\scriptstyle 7} \\ 609 \\ \times\quad 8 \\ \hline \mathbf{4872} \end{array}$$

14. $7 \times 8 \times 10$

$56 \times 10 = \mathbf{560}$

15. $7 \times 8 \times 0$

$56 \times 0 = \mathbf{0}$

16.
$$\begin{array}{r} {\scriptstyle 8\ 1\ 6\ 1} \\ 9374 \\ -\ 4938 \\ \hline \mathbf{4436} \end{array}$$

17.
$$\begin{array}{r} {\scriptstyle 9\ \ 9\ 1} \\ \$10.00 \\ -\$\ 6.24 \\ \hline \mathbf{\$3.76} \end{array}$$

18.
$$\begin{array}{r} }\ 1 \\ }\ 427\ \} \\ +\quad 85\ \}\ 512 \\ \hline 2010 \end{array}$$

Find the missing addend by subtracting the sum of the known addends from the total sum.

$$\begin{array}{r} {\scriptstyle 19\ 10\ 1} \\ 2010 \\ -\ 512 \\ \hline \mathbf{1498} \end{array}$$

19. $23.11;
$$\begin{array}{r} \$12.43 \\ 0.68 \\ +\ 10.00 \\ \hline \mathbf{\$23.11} \end{array}$$

20. Sample: Since $4 \times 10 = 40$, the quantities are the same.

21. $8 \times 90 = (8 \times 9) \times n$

$8 \times 90 = 72 \times n$

$720 = 72 \times n$

We know that $72 \times 10 = 720$, so $n =$ **10.**

22. $8 \times 9 = 72$, $9 \times 8 = 72$, $72 \div 8 = 9$, $72 \div 9 = 8$

23. $64 \div 8 =$ **8 squares**

24. $\frac{3}{4}$ of a dollar is equal to 75¢.

$\frac{3}{10}$ of a dollar is equal to 30¢.

$$\begin{array}{r} {\scriptstyle 1}\\ \$0.75\\ +\$0.30\\ \hline \$1.05 \end{array}$$

25. **500**

26. **13**

27.
$$\begin{array}{r} {\scriptstyle 1}\\ 347\\ +809\\ \hline 1156 \end{array}$$

28.
$$\begin{array}{r} {\scriptstyle 2}\\ 16\\ \times\ 4\\ \hline 64\\ +\ 3\\ \hline 67 \end{array}$$

Sample: Todd's answer is not correct because the product plus the remainder does not equal the dividend.

29. **B;** 15 is an odd number, which means that of all the choices only 2 is an even number.

30. **See student work.** Recall the multiplication facts, since $3 \times 8 = 24$, we know the missing factor is **8.**

Early Finishers

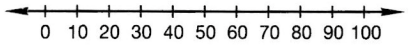
$\$24.75 + \$19.75 + \$19.75 \times 2$

$$\begin{array}{r} {\scriptstyle 3\,3\,2}\\ \$24.75\\ \$19.75\\ \$19.75\\ +\$19.75\\ \hline \$84.00 \end{array}$$

$\$84 \div 3 =$ **$28**

Lesson Practice 27

a.



b. On the Celsius scale, 0°C is the freezing point of water. Five degrees less than 0°C is equal to −5°C.

c. **30 < 80 or 80 > 30**

Written Practice 27

1. **408 + 347 + 419 = *t*;**

$$\begin{array}{r} {\scriptstyle 2}\\ 408\\ 347\\ +\ 419\\ \hline \text{1174 miles} \end{array}$$

2. **$5 \times 12 = t$; 60 inches**

3. **$f - 27 = 7$; $27 + 7 = 34$ autographed footballs**

4. **$9 \times \$0.15 = m$**

$$\begin{array}{r} {\scriptstyle 1\ 4}\\ \$0.15\\ \times\quad 9\\ \hline \$1.35 \end{array}$$

5. $12 \div 2 =$ **6 years old**

6.
$$\begin{array}{r} 172\text{ R }4\\ 5\overline{)864}\\ -5\\ \hline 36\\ -35\\ \hline 14\\ -10\\ \hline 4 \end{array}$$

7.
$$\begin{array}{r} \$0.68\\ 4\overline{)\$2.72}\\ -24\\ \hline 32\\ -32\\ \hline 0 \end{array}$$

8.
$$\begin{array}{r} 67\text{ R }5\\ 9\overline{)608}\\ -54\\ \hline 68\\ -63\\ \hline 5 \end{array}$$

9. $378 \div (18 \div 3)$

$378 \div \quad 6 \quad =$ **63**

10. $82 - 13 =$ **69°F**

11.
$$\begin{array}{r} {\scriptstyle 1\ 4}\\ \$52.60\\ \times\quad 7\\ \hline \$368.20 \end{array}$$

12.
$$\begin{array}{r} {\scriptstyle 5\,4\,2}\\ 3874\\ \times\quad 6\\ \hline 23{,}244 \end{array}$$

13.
$$\begin{array}{r} {\scriptstyle 5\,2}\\ 9063\\ \times\quad 8\\ \hline \mathbf{72{,}504} \end{array}$$

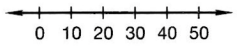
14. As we move along the curve toward the right, we see that the numbers grow larger. The arrow points to a location past the 200 mark and near the 400 mark. Halfway between the 200 and 400 marks is a long mark that stands for 300. The arrow points halfway between 300 and 400, so it points to **350.**

15.
$$\begin{array}{r} 386\\ 4287\\ 672 \end{array}\Big\} 5345$$
$$\begin{array}{r} +\quad m\\ \hline \mathbf{5350} \end{array}$$

Find the missing addend by subtracting the sum of the known addends from the total sum.

$$\begin{array}{r} {\scriptstyle 4\,1}\\ 5350\\ -\,5345\\ \hline \mathbf{5} \end{array}$$

16.



17. B

18. The factors of 30 are **1, 2, 3, 5, 6, 10, 15, and 30.**

19.
$$\begin{array}{r} {\scriptstyle 3\,9}\\ 405\\ -\,397\\ \hline \mathbf{8} \end{array}$$

20. C; when looking at the choices, 25, 27 and 29 are odd numbers except for 28.

21. −10°C; on the Celsius scale, 0°C is the freezing point of water. Ten degrees less than 0°C is −10°C.

22. This sequence counts up. We find that the rule for this sequence is "count up by tens." Counting up by tens from 180 gives us the next three terms: **190, 200, 210.**

23. The hundreds place is the third digit from the right. The digit in this position is **5.**

24. Three hundred twenty-seven thousand, forty

25. 50; the number is directly between 40 and 60.

26. $24 \div 3$, $\frac{24}{3}$, $3\overline{)24}$

27.
$$\begin{array}{r} {\scriptstyle 2}\\ 14\\ \times\ 7\\ \hline 98\\ +\ 2\\ \hline 100 \end{array}$$

Madeline's answer is correct. The product plus the remainder equals the dividend.

28. $12 \div (6 \div 2) \bigcirc (12 \div 6) \div 2$

$12 \div 3 \bigcirc 2 \div 2$

4 > 1

No

29. 0.3

30. a. Divide the number of millimeters by 10

b. $100 \div 10 =$ **10 centimeters**

Early Finishers

$82°F - (6 \times 2°F)$

$82°F - 12°F =$ **70°F**

Lesson Practice 28

a. $4 \times 100 =$ **400 years**

b. June 19, 2014

c. 366 days

d. $\frac{1}{10}$ of a century is 10 years, which is a **decade.**

e. 8:02 p.m.

f. 8:45 p.m.

g. 12:20 p.m.

h. 12:30 p.m.

i. 9:15 a.m.

j. 11:25 a.m.

k. 1:25 p.m.; 9:25 a.m.

l. 1 hr 45 min or 105 min

Written Practice 28

1. $m - \$600 = \$1267$;

$$\begin{array}{r} \$1267 \\ +\ 600 \\ \hline \$1867 \end{array}$$

2. **$1873 + $200 = *t*; $2073**

3. **13 cars; 4*c* = 52; sample: I divided 52 by 4 and got 13.**

4. 10 years ÷ 2 = **5 years**

5. The factors of 18 are 1, 2, 3, 6, 9, and 18.

   The factors of 24 are 1, 2, 3, 4, 6, 8, 12, and 24.

   The factors of 18 and 24 are **1, 2, 3, and 6.**

6. $$\begin{array}{r} 181 \\ 3\overline{)543} \\ -3 \\ \hline 24 \\ -24 \\ \hline 03 \\ -3 \\ \hline 0 \end{array}$$

7. $$\begin{array}{r} \$0.75 \\ 8\overline{)\$6.00} \\ -56 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

8. 528 ÷ (28 ÷ 7)

   528 ÷ 4

$$\begin{array}{r} 132 \\ 4\overline{)528} \\ -4 \\ \hline 12 \\ -12 \\ \hline 08 \\ -8 \\ \hline 0 \end{array}$$

9. $w = \frac{696}{6}$

$$\begin{array}{r} 116 \\ 6\overline{)696} \\ -6 \\ \hline 09 \\ -6 \\ \hline 36 \\ -36 \\ \hline 0 \end{array}$$

10. **9:05 p.m.; 12:05 a.m.**

11. **12:30 p.m.**

12. Both $\frac{1}{2}$ and $\frac{5}{10}$ of a dollar are equal to 50¢, this means that the sum is $1.

13. **Saturday**

14. **756;** for the number to be even, 6 must be the last digit. This means 7 must be the first digit in order to produce the largest three-digit number.

15. $$\begin{array}{r} {\scriptstyle 2\,1\,1} \\ 4387 \\ 2965 \\ +\,4943 \\ \hline 12{,}295 \end{array}$$

16. $$\begin{array}{r} {\scriptstyle 5\,2\,6\,1} \\ \$\not{6}\not{3}.\not{7}5 \\ -\ \$46.88 \\ \hline \$16.87 \end{array}$$

17. $$\begin{array}{r} {\scriptstyle 3\,9\,1\,0\,1} \\ \not{4}\not{0}\not{1}0 \\ -\ 563 \\ \hline 3447 \end{array}$$

18. $$\begin{array}{r} {\scriptstyle 2\ \ 5} \\ 3408 \\ \times\ \ \ 7 \\ \hline 23{,}856 \end{array}$$

19. $$\begin{array}{r} {\scriptstyle 4\ \ 4} \\ \$3.56 \\ \times\ \ \ 8 \\ \hline \$28.48 \end{array}$$

20. $$\begin{array}{r} {\scriptstyle 7\,6} \\ 487 \\ \times\ \ \ 9 \\ \hline 4383 \end{array}$$

21. **8:55 a.m.**

22. **10 × 2 = 20, 2 × 10 = 20, 20 ÷ 10 = 2, 20 ÷ 2 = 10**

23. $$\begin{array}{r} {\scriptstyle 1} \\ 22 \\ \times\ 9 \\ \hline 198 \\ +\ \ 2 \\ \hline 200 \end{array}$$ **; the answer is correct.**

24. This sequence counts up. We find that the rule for this sequence is "count up by one hundreds." Counting up by one hundreds from 700 gives us the next three terms **800, 900, 1000.**

25. **50; the number 50 is directly between 40 and 60.**

26. **4 × 7 = 28 or 7 × 4 = 28**

27. **Ten centuries; 1000 years ÷ 100 years = 10 centuries**

28. **4 quarter circles**

29. **a. 60 minutes**

    b. 30 minutes

    c. $\frac{30}{60}$

30. **C**

Lesson Practice 29

a. 34×20

$34 \times 2 \times 10$

$68 \times 10 = \mathbf{680}$

b. 50×48

$10 \times 5 \times 48$

$10 \times 240 = \mathbf{2400}$

c. 34×200

$34 \times 2 \times 100$

$68 \times 100 = \mathbf{6800}$

d. 500×36

$100 \times 5 \times 36$

$100 \times 180 = \mathbf{18{,}000}$

e. 55×30

$55 \times 3 \times 10$

$165 \times 10 = \mathbf{1650}$

f. $\$1.25 \times 30$

$\$1.25 \times 3 \times 10$

$\$3.75 \times 10 = \mathbf{\$37.50}$

g. 55×300

$55 \times 3 \times 100$

$165 \times 100 = \mathbf{16{,}500}$

h. $\$1.25 \times 300$

$\$1.25 \times 3 \times 100$

$\$3.75 \times 100 = \mathbf{\$375.00}$

i. 60×45

$10 \times 6 \times 45$

$10 \times 270 = \mathbf{2700}$

j. $\$2.35 \times 40$

$\$2.35 \times 4 \times 10$

$\$9.40 \times 10 = \mathbf{\$94.00}$

k. 400×37

$100 \times 4 \times 37$

$100 \times 148 = \mathbf{14{,}800}$

l. $\$1.43 \times 200$

$\$1.43 \times 2 \times 100$

$\$2.86 \times 100 = \mathbf{\$286.00}$

Written Practice 29

1. **4 pencils; $3p = 12$; $12 \div 3 = 4$**

2. **$\$841 - \$75 = m$; \$766**

3. **$10 \times 10 = t$; 100 stamps**

4. $1845 + 100 = \mathbf{1945}$

5. The factors of 60 are **1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, and 60.**

6. 37×60

$37 \times 6 \times 10$

$220 \times 10 = \mathbf{2220}$

7. $37 \times 6 \times 10$

$220 \times 10 = \mathbf{2220}$

8. 50×46

$10 \times 5 \times 46$

$10 \times 230 = \mathbf{2300}$

9. $60 \times \$0.73$

$10 \times 6 \times \$0.73$

$10 \times \$4.38 = \mathbf{\$43.80}$

10. $50 \times (1000 - 200)$

50×800

$10 \times 5 \times 8 \times 100$

$10 \times 40 \times 100$

$400 \times 100 =$ **40,000**

11. The second digit from the right end of the number is 5, which means that 5 is in the **tens** place.

12. **11:30 a.m.**

13. $\frac{1}{2}$ of a dollar = \$0.50

$\frac{3}{4}$ of a dollar = \$0.75

$+ \frac{3}{10}$ of a dollar = \$0.30

\$1.55

14. 38×40

$38 \times 4 \times 10$

$152 \times 10 =$ **1520**

15. **Nine hundred forty-four thousand**

16.
$$\begin{array}{r} {\scriptstyle 1\,1\,1\,} \\ 4637 \\ 2843 \\ +\,6464 \\ \hline \mathbf{13{,}944} \end{array}$$

17.
$$\begin{array}{r} {\scriptstyle 3\,15\,1\,} \\ \cancel{4}618 \\ -\,2728 \\ \hline \mathbf{1890} \end{array}$$

18.
$$\begin{array}{r} {\scriptstyle 5\,9\,9\,1} \\ \$\cancel{6}0.\cancel{0}0 \\ -\,\$\ 7.63 \\ \hline \mathbf{\$52.37} \end{array}$$

19.
$$\begin{array}{r} \mathbf{36\ R\ 4} \\ 10\overline{)364} \\ -30 \\ \hline 64 \\ -60 \\ \hline 4 \end{array}$$

20. $w = \frac{364}{7}$

$$\begin{array}{r} \mathbf{52} \\ 7\overline{)364} \\ -35 \\ \hline 14 \\ -14 \\ \hline 0 \end{array}$$

21.
$$\begin{array}{r} \mathbf{52} \\ 7\overline{)364} \\ -35 \\ \hline 14 \\ -14 \\ \hline 0 \end{array}$$

22. **Odd; any number multiplied by 2 will result in an even number. Adding 1 to that number will result in an odd number.**

23. **May 19, 1957**

24. **B**

25. This sequence counts up. We find that the rule for this sequence is "count up by one hundreds." Counting up by one hundreds from 800 gives us the next three terms: **900, 1000, 1100.**

26. a. **C**

b. **Sample: 205 is an odd number, so 2 is not a factor; 502 is even but it does not have a 5 or 0 at the end, so 5 is not a factor.**

27.
$$\begin{array}{r} {\scriptstyle 2\,} \\ 43 \\ \times\ 7 \\ \hline 301 \\ +\ 1 \\ \hline \mathbf{302;\ The\ answer\ is\ not\ correct.} \end{array}$$

28. a. $12 - (6 - 2) \bigcirc (12 - 6) - 2$

$12 - 4 \bigcirc 6 - 2$

8 > 4

b. **The Associative Property does not apply to subtraction.**

29. $\frac{5}{10} = \frac{1}{2} =$ **0.5**

30. a. **\$5.89, \$5.49, \$4.35, \$4.19**

b. **Neighborhood and supermarket; \$5.49 − \$4.19 = \$1.30**

Early Finishers

30×50

$10 \times 3 \times 5 \times 10$

$10 \times 15 \times 10$

$150 \times 10 =$ **1500 dimes**

One dollar has 10 dimes.

$1500 \div 10 =$ **150 dollars**

Lesson Practice 30

a. $\frac{1}{4}$

b. 25%

c. 0.25

d. $\frac{2}{4}$, $\frac{1}{2}$

e. 50%

f. 0.50 or 0.5

g. $\frac{1}{10}$

h. 10%

i. 0.10 or 0.1

j. 100%; $1.00

k. 75%; $0.75

l. 50%; $0.50

m. 25%; $0.25

n. 100%; $1.00

o. 90%; $0.90

p. 80%; $0.80

q. 70%; $0.70

r. 60%; $0.60

s. 50%; $0.50

t. 40%; $0.40

u. 30%; $0.30

v. 20%; $0.20

w. 10%; $0.10

Written Practice 30

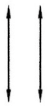
1. 100 − 36 = *p*; 64 points

2. 365 − 31 = *d*; 334 days

3. 4*q* = 28; 28 ÷ 4 = 7 quarts

4. 5 × $0.45 = *m*;

$$\begin{array}{r} \overset{2}{\$0.}\overset{2}{45} \\ \times \quad 5 \\ \hline \$2.25 \end{array}$$

5. 

6. The factors of 25 are 1, 5 and 25.

   The factors of 50 are 1, 2, 5, 10, 25 and 50.

   The factors of 25 and 50 are **1, 5 and 25.**

7. a. $\frac{2}{9}$

   b. $\frac{7}{9}$

8. 3

9. 7:45 a.m.

10.
$$\begin{array}{r} \overset{1}{\$}\overset{1}{2}8.93 \\ +\ \$19.46 \\ \hline \$48.39 \end{array}$$

11.
$$\begin{array}{r} \overset{2}{3}\overset{9}{\not{0}}\overset{10}{\not{1}}0 \\ -\ 1342 \\ \hline 1668 \end{array}$$

12.
$$\begin{array}{r} \overset{2}{2}8 \\ 54 \\ 75 \\ 91 \\ +26 \\ \hline 274 \end{array}$$

13.
$$\begin{array}{r} \overset{1}{7}\overset{1}{6}4 \\ \times \quad 30 \\ \hline 22{,}920 \end{array}$$

14.
$$\begin{array}{r} \$9.\overset{4}{0}8 \\ \times \quad 60 \\ \hline \$544.80 \end{array}$$

15.
$$\begin{array}{r} \$1.24 \\ 6\overline{)\$7.44} \\ -6 \\ \hline 14 \\ -12 \\ \hline 24 \\ -24 \\ \hline 0 \end{array}$$

16. $\begin{array}{r} 36 \text{ R } 2 \\ 10\overline{)362} \\ -30 \\ \hline 62 \\ -60 \\ \hline 2 \end{array}$

17. $\begin{array}{r} 224 \text{ R } 2 \\ 4\overline{)898} \\ -8 \\ \hline 09 \\ -8 \\ \hline 18 \\ -16 \\ \hline 2 \end{array}$

18. $\begin{array}{r} {\scriptstyle 1\,1\ \ 2} \\ \$42.37 \\ \$\ 7.58 \\ \$\ 0.68 \\ +\ \$15.00 \\ \hline \$65.63 \end{array}$

19. $(48 \times 6) - 9$
$288 - 9 = \mathbf{279}$

20. $6 \times 30 \times 12$
180×12
$\begin{array}{r} {\scriptstyle 1\ \ } \\ 180 \\ \times\ 12 \\ \hline 1360 \\ +\ 1800 \\ \hline 2160 \end{array}$

21. **7 months**

22. $\begin{array}{r} {\scriptstyle 1\ 1\ \ } \\ 605 \\ +\ 597 \\ \hline 1202 \end{array}$

23. **B**

24. This sequence counts up. We find that the rule for this sequence is "count up by tens." Counting up by tens from 280 gives us the next three terms: **290, 300 and 310.**

25. **34°C**

26. $1803 + 10 = \mathbf{1813}$

27. **a. 0.50**

b. 50%

28. $\begin{array}{r} {\scriptstyle 2\ \ } \\ 14 \\ \times\ 7 \\ \hline 98 \\ +\ 2 \\ \hline 100 \end{array}$; **The answer is correct.**

29. **25 > 20; sample: the number in each group will be smaller when dividing 100 by 5, so 100 ÷ 4 is greater.**

30. ***n* = 20 ÷ 2 = 10; sample: twenty students are to be divided into 2 equal groups. How many students will be in each group?**

Early Finishers

See student work; sample: vegetables: $\frac{5}{10}$, 0.5, 50%; berries: $\frac{2}{10}$, 0.2, 20%; flowers: $\frac{3}{10}$, 0.3, 30%.

Investigation 3

Focus on

1. **60 questions;** the word half means that the questions are divided into 2 equal parts. $120 \div 2 = 60$

2. **40 questions;** the word third means that the questions are divided into 3 equal parts. $120 \div 3 = 40$

3. **24 questions;** the word fifth means that the questions are divided into 5 equal parts. $120 \div 5 = 24$

4. **15 questions;** the word eighth means that the questions are divided into 8 equal parts. $120 \div 8 = 15$

5. **41 questions;** subtract the questions that were not multiple choice from the total. $120 - 40 - 24 - 15 = 41$

6. **More than $\frac{1}{3}$;** one third of 120 is equal to 40 questions, the 41 multiple choice questions are more than 40.

7. **More than half;** $40 + 24 > 60$

8. **Less than half;** $40 + 15 < 60$

Activity

9.