



UPDATED
EDITION



Simply

Good and Beautiful

MATH 5



ANSWERS &
SOLUTIONS



Note to Parents

Math 5 Answers and Solutions includes detailed solutions for all problems in the course book. Final answers are highlighted for easy reference.

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LONG DIVISION WITH REMAINDERS: CHECKING DIVISION

Video Lesson

$$\begin{array}{r} 35 \text{ R4} \\ 7 \overline{)249} \\ \underline{-21} \downarrow \\ 39 \\ \underline{-35} \\ 4 \end{array}$$

Practice

1. a. $\begin{array}{r} 121 \text{ R2} \\ 3 \overline{)365} \\ \underline{-3} \downarrow \\ 06 \\ \underline{-6} \downarrow \\ 05 \\ \underline{-3} \\ 2 \end{array}$

b. $\begin{array}{r} 213 \text{ R6} \\ 12 \overline{)2,562} \\ \underline{-24} \downarrow \\ 16 \\ \underline{-12} \downarrow \\ 42 \\ \underline{-36} \\ 6 \end{array}$

2. $\begin{array}{r} 172 \text{ R5} \\ 3 \overline{)521} \\ \underline{-3} \downarrow \\ 22 \\ \underline{-21} \downarrow \\ 11 \\ \underline{-6} \text{ (circled)} \\ 5 \end{array}$

$\begin{array}{r} 173 \text{ R2} \\ 3 \overline{)521} \\ \underline{-3} \downarrow \\ 22 \\ \underline{-21} \downarrow \\ 11 \\ \underline{-9} \\ 2 \end{array}$

3. $\begin{array}{r} 173 \\ \times 3 \\ \hline 519 \end{array}$

$\begin{array}{r} 519 \\ + 2 \\ \hline 521 \end{array}$

4. $\begin{array}{r} 13 \text{ R1} \\ 2 \overline{)27} \\ \underline{-2} \downarrow \\ 07 \\ \underline{-6} \\ 1 \end{array}$

13 books
Money left over: \$1

5. a. $\begin{array}{r} 21 \text{ R2} \\ 6 \overline{)128} \\ \underline{-12} \downarrow \\ 08 \\ \underline{-6} \\ 2 \end{array}$

21 treats

b. Treats left over: 2

6. $\begin{array}{r} 11 \text{ R7} \\ 8 \overline{)95} \\ \underline{-8} \downarrow \\ 15 \\ \underline{-8} \\ 7 \end{array}$

a. 11 ears of corn

b. 7 ears of corn

7. $\begin{array}{r} 214 \text{ R1} \\ 2 \overline{)428} \end{array}$

$\begin{array}{r} 127 \text{ R3} \\ 7 \overline{)894} \end{array}$

$\begin{array}{r} 320 \text{ R2} \\ 3 \overline{)962} \end{array}$

Work for checking each answer is shown below:

$$\begin{array}{r} 214 \\ \times 2 \\ \hline 428 \end{array}$$

$$\begin{array}{r} 428 \\ + 1 \\ \hline 429 \end{array}$$

This answer is correct.

$$\begin{array}{r} 127 \\ \times 7 \\ \hline 889 \end{array}$$

$$\begin{array}{r} 889 \\ + 3 \\ \hline 892 \end{array}$$

This answer is incorrect.

$$\begin{array}{r} 320 \\ \times 3 \\ \hline 960 \end{array}$$

$$\begin{array}{r} 960 \\ + 2 \\ \hline 962 \end{array}$$

This answer is correct.

8. a. $\begin{array}{r} 231 \\ 11 \overline{)2,541} \\ \underline{-22} \\ 34 \\ \underline{-33} \\ 11 \\ \underline{-11} \\ 0 \end{array}$

b. $\begin{array}{r} 35 \\ 9 \overline{)315} \\ \underline{-27} \\ 45 \\ \underline{-45} \\ 0 \end{array}$

c. $\begin{array}{r} 132 \text{ R4} \\ 7 \overline{)928} \\ \underline{-7} \\ 22 \\ \underline{-21} \\ 18 \\ \underline{-14} \\ 4 \end{array}$

Review

1. fraction: $\frac{74}{100}$
percent: 74%

2. a. (given)

b. $4^3 = 4 \times 4 \times 4 = 64$

c. $3^3 = 3 \times 3 \times 3 = 27$

d. $2^4 = 2 \times 2 \times 2 \times 2 = 16$

3. 486:

486 is even, so 486 is divisible by 2. $4 + 8 + 6 = 18$ 18 is divisible by 3, so 486 is divisible by 3.

486 is divisible by 6 because it is divisible by both 2 and 3.

772:

772 is even, so 772 is divisible by 2. $7 + 7 + 2 = 16$ 16 is not divisible by 3, so 772 is not divisible by 3.

772 is not divisible by 6 because it is not divisible by 3.

UNIT 1 | LESSON 20

PERFECT SQUARES TO 225 AND LOGIC GAME

Practice

$$4^2 = 16$$

$$\sqrt{9} = 3$$

$$5^2 = 25$$

$$\sqrt{36} = 6$$

$$2^2 = 4$$

$$\sqrt{81} = 9$$

$$7^2 = 49$$

$$\sqrt{100} = 10$$

$$11^2 = 121$$

$$13^2 = 169$$

$$\sqrt{64} = 8$$

$$\sqrt{49} = 7$$

$$3^2 = 9$$

$$\sqrt{1} = 1$$

$$12^2 = 144$$

$$\sqrt{196} = 14$$

$$15^2 = 225$$

$$\sqrt{169} = 13$$

$$\sqrt{225} = 15$$

$$\sqrt{144} = 12$$

Number Neighborhood

A Use long division. $459 \div 8 = 57.375$

B $6 \times 3 \div 2 + 2^3 = 17$

C $15^2 = 225$

D $14^2 = 196$

E Estimate the area. $12 \text{ ft} \times 48 \text{ ft} = 576 \text{ ft}^2$

F $\sqrt{169} = 13$

G Find the range: 7, 9, 32, 87. Range = 80

H Find the median: 12, 23, 19, 18, 11. Median = 18

I What fraction amount is shown on this graph? $\frac{29}{100}$

J $14B = 196$. $B = 14$

K Use short division. $201 \div 7 = 28.714$

L Use short division. $32 \div 6 = 5.333$

M $8 \times 10 \times 9 = 720$

N $7,350,000 \div 10^4 = 735$

Work for each problem is shown on the next page.

House numbers:

13, 14, 17, 18, 29, 32, 80, 196, 201, 225, 459, 500, 720, 735

Clues:

- ✓ Mia's address is divisible by 5.
This is given on the chart.
- ✓ McKay's address is divisible by 6.
18 is divisible by both 2 and 3, so 18 is divisible by 6. 720 is divisible by both 2 and 3, so 720 is divisible by 6.
Write 18 and 720 in McKay's row.
- ✓ Heidi's address is divisible by 10.
80, 500, and 720 all end in a 0, so they are all divisible by 10. Write 80, 500, and 720 in Heidi's row.
- ✓ Grayson's address is divisible by 4.
32 and 80 are divisible by 4. 196 is divisible by 4 because the last two digits (96) are divisible by 4. 500 is divisible by 4 because the last two digits (00) are divisible by 4. 720 is divisible by 4 because the last two digits (20) are divisible by 4. Write 32, 80, 196, 500, and 720 in Grayson's row.
- ✓ Sawyer's address is odd and greater than 100.
201, 225, 459, and 735 are odd and greater than 100. Write 201, 225, 459, and 735 in Sawyer's row.
- ✓ Elijah's address is a two-digit prime number.
13, 17, and 29 are two-digit prime numbers. Write 13, 17, and 29 in Elijah's row.
- ✓ If you multiply the digits of Domenic's address, the product is 0.
For a product to be 0, at least one of the digits must be 0. 80, 201, 500, and 720 all have 0 as a digit. Write 80, 201, 500, and 720 in Domenic's row.
- ✓ Mia's address is 15 squared.
 $15 \times 15 = 225$. Circle 225 in Mia's row.
- ✓ Elijah's address is greater than 4^2 and less than 3^3 .
 $4^2 = 4 \times 4 = 16$ and $3^3 = 3 \times 3 \times 3 = 27$. 17 is greater than 16 and less than 27. Circle 17 in Elijah's row.
- ✓ If you multiply the digits of Grayson's address, the product is greater than 2 and less than 10.
80, 500, and 720 have 0 as a digit, so the product of their digits is 0, which is not greater than 2. For 32, $3 \times 2 = 6$, and for 196, $1 \times 9 \times 6 = 54$. The product of the digits of 32 is 6, which is greater than 2 and less than 10. Circle 32 in Grayson's row.
- ✓ McKay's address is less than the quotient of $5,000 \div 10^2$.
The exponent is 2. Take 2 zeros off of 5,000. $5,000 \div 10^2 = 50$. 18 is less than 50. Circle 18 in McKay's row.
- ✓ Heidi's address is divisible by 8 and greater than 100.
80 is not greater than 100. 500 is not divisible by 8. 720 is divisible by 8 and is greater than 100.
Circle 720 in Heidi's row.

UNIT ASSESSMENT

Number Patterns/Divisibility Strategies

1. $110 + 15 = 125$
 $125 + 15 = 140$
 $140 + 15 = 155$
 $155 + 15 = 170$
 $170 + 15 = 185$
 $185 + 15 = 200$

110, 125, 140, 155, 170, 185, 200

rule: add 15

2. The number is divisible by 2 because it is even.
 $9 + 6 + 4 + 0 = 19$ 19 is not divisible by 3, so 9,640 is not divisible by 3.
The number formed by the last two digits (40) is divisible by 4, so 9,640 is divisible by 4.
The number is divisible by 5 because it ends in a 0.
The number is not divisible by 6 because it is not divisible by 3.
The sum of the digits (19) is not divisible by 9, so 9,640 is not divisible by 9.
The number is divisible by 10 because it ends in a 0.

② 3 ④ ⑤ 6 9 ⑩

Number Patterns/Divisibility Strategies Additional Practice

1. $99 - 11 = 88$
 $88 - 11 = 77$
 $77 - 11 = 66$
 $66 - 11 = 55$
 $55 - 11 = 44$
 $44 - 11 = 33$

99, 88, 77, 66, 55, 44, 33

rule: subtract 11

2. The number is divisible by 2 because it is even.
 $4 + 8 + 2 + 4 = 18$ 18 is divisible by 3, so 4,824 is divisible by 3.
 The number formed by the last two digits (24) is divisible by 4, so 4,824 is divisible by 4.
 The number is not divisible by 5 because it does not end in a 0 or 5.
 The number is divisible by 6 because it is divisible by both 2 and 3.
 The sum of the digits (18) is divisible by 9, so 4,824 is divisible by 9.
 The number is not divisible by 10 because it does not end in a 0.

② ③ ④ 5 ⑥ ⑨ 10

Factors of Prime & Composite Numbers

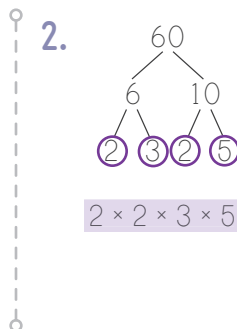
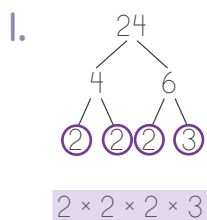
1. 17: 1, ①7
2. 20: 1, ② 4, ⑤ 10, 20
3. 35: 1, ⑤ ⑦ 35
4. 41: 1, ④1

Factors of Prime & Composite Numbers Additional Practice

1. 30: 1, ② ③ ⑤ 6, 10, 15, 30
2. 55: 1, ⑤ ⑪ 55
3. 18: 1, ② ③ 6, 9, 18
4. 43: 1, ④3

Prime Factorization

Different factors could have been chosen for the first branches. An example for each is shown below.



UNIT 2 | LESSON 37

PERIMETER AND AREA OF IRREGULAR SHAPES

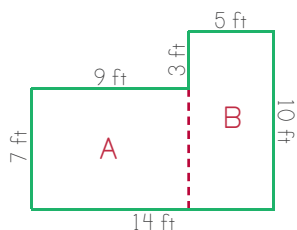
Video Lesson

Top Box

$$P = 7 \text{ ft} + 9 \text{ ft} + 3 \text{ ft} + 5 \text{ ft} + 10 \text{ ft} + 14 \text{ ft} = 48 \text{ ft}$$

$$\text{perimeter} = 48 \text{ ft}$$

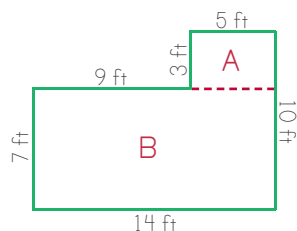
Work may vary. The area is shown using three different methods below.



$$\text{Area A: } 9 \text{ ft} \times 7 \text{ ft} = 63 \text{ ft}^2$$

$$\text{Area B: } 5 \text{ ft} \times 10 \text{ ft} = 50 \text{ ft}^2$$

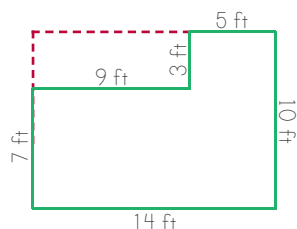
$$\text{Area of irregular shape: } 63 \text{ ft}^2 + 50 \text{ ft}^2 = 113 \text{ ft}^2$$



$$\text{Area A: } 5 \text{ ft} \times 3 \text{ ft} = 15 \text{ ft}^2$$

$$\text{Area B: } 14 \text{ ft} \times 7 \text{ ft} = 98 \text{ ft}^2$$

$$\text{Area of irregular shape: } 15 \text{ ft}^2 + 98 \text{ ft}^2 = 113 \text{ ft}^2$$



$$\text{Area of large rectangle: } 14 \text{ ft} \times 10 \text{ ft} = 140 \text{ ft}^2$$

$$\text{Area of the empty space: } 9 \text{ ft} \times 3 \text{ ft} = 27 \text{ ft}^2$$

$$\text{Area of irregular shape: } 140 \text{ ft}^2 - 27 \text{ ft}^2 = 113 \text{ ft}^2$$

$$\text{area} = 113 \text{ ft}^2$$

Bottom Box

$$\text{Length of the blue side: } 3 \text{ ft} + 4 \text{ ft} = 7 \text{ ft}$$

$$\text{Length of the purple side: } \underline{\quad} \text{ ft} + 5 \text{ ft} = 10 \text{ ft}$$

$$10 \text{ ft} - 5 \text{ ft} = 5 \text{ ft}$$

UNIT 2 REVIEW: COUNTY FAIR FUN

Review

The final answers and the winning ribbons are shown below. Work for each problem is shown starting on the next page.

UNIT 2 REVIEW: COUNTY FAIR FUN

Welcome to the county fair! Visit each exhibit or activity and complete the problems. Use the Lesson 58 stickers from the back of your Math 5 book to add the correct county fair winner ribbons to the pages. There is no video, mini lesson, or practice. Enjoy the fair!

1. Circle the greatest fraction and cross off the least fraction on each corn cob. Then give the pink ribbon to the corn cob with the greatest fraction.

2. Find the perimeters and areas of the outlined shapes. The quilt blocks are perfectly square, although they may not look that way when the quilt is hanging.

3. The pie was weighed in grams four times. Write the greatest weight on the pie. Label the other numbers 1-3, with 1 being the least.

4. Convert the weight of each tomato. Give the silver ribbon to the tomato that weighs the most.

5. Round the weight of each pumpkin (in pounds) to the place value shown. Then give the red ribbon to the heaviest pumpkin.

6. Multiply. Award the chicken with a product of $\frac{2}{3} \times \frac{4}{5}$ a blue ribbon.

7. Simplify each fraction. Award the rabbit with the smallest fraction the orange ribbon.

8. Add or subtract the decimal numbers by each steer. Award the steer with the greatest decimal number the purple ribbon.

9. Read the scale by each pig. Award the pig that weighs the most the yellow ribbon.

10. Write the quotient as a mixed number. Award the goat with the greater quotient the green ribbon.

11. Cross off the equivalent decimal numbers. The sheep with the remaining number wins the brown ribbon.

Barn of Champions

6. Multiply. Award the chicken with a product of $\frac{2}{3} \times \frac{4}{5}$ a blue ribbon.

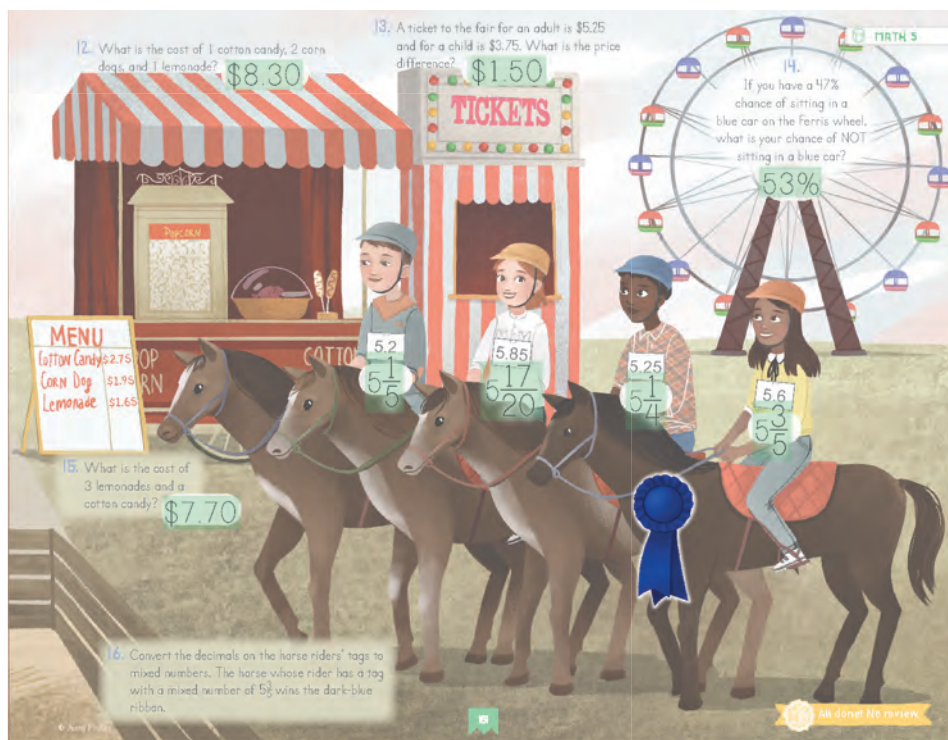
7. Simplify each fraction. Award the rabbit with the smallest fraction the orange ribbon.

8. Add or subtract the decimal numbers by each steer. Award the steer with the greatest decimal number the purple ribbon.

9. Read the scale by each pig. Award the pig that weighs the most the yellow ribbon.

10. Write the quotient as a mixed number. Award the goat with the greater quotient the green ribbon.

11. Cross off the equivalent decimal numbers. The sheep with the remaining number wins the brown ribbon.



1. a. $\frac{1}{8}$: Half of 8 is 4. 1 is less than 4, so $\frac{1}{8}$ is less than $\frac{1}{2}$.

$\frac{2}{4}$: Half of 4 is 2, so $\frac{2}{4}$ is equal to $\frac{1}{2}$.

$\frac{4}{5}$: Half of 5 is $2\frac{1}{2}$. 4 is greater than $2\frac{1}{2}$, so $\frac{4}{5}$ is greater than $\frac{1}{2}$.

Least to greatest: $\frac{1}{8}, \frac{2}{4}, \frac{4}{5}$

b. $\frac{1}{2}$: $\frac{1}{2}$ is equivalent to $\frac{1}{2}$.

$\frac{2}{7}$: Half of 7 is $3\frac{1}{2}$. 2 is less than $3\frac{1}{2}$, so $\frac{2}{7}$ is less than $\frac{1}{2}$.

$\frac{7}{9}$: Half of 9 is $4\frac{1}{2}$. 7 is greater than $4\frac{1}{2}$, so $\frac{7}{9}$ is greater than $\frac{1}{2}$.

Least to greatest: $\frac{2}{7}, \frac{1}{2}, \frac{7}{9}$

c. $\frac{3}{6}$: Half of 6 is 3, so $\frac{3}{6}$ is equal to $\frac{1}{2}$.

$\frac{9}{10}$: Half of 10 is 5. 9 is greater than 5, so $\frac{9}{10}$ is greater than $\frac{1}{2}$.

$\frac{2}{5}$: Half of 5 is $2\frac{1}{2}$. 2 is less than $2\frac{1}{2}$, so $\frac{2}{5}$ is less than $\frac{1}{2}$.

Least to greatest: $\frac{2}{5}, \frac{3}{6}, \frac{9}{10}$

d. $\frac{6}{7}$: Half of 7 is $3\frac{1}{2}$. 6 is greater than $3\frac{1}{2}$, so $\frac{6}{7}$ is greater than $\frac{1}{2}$.

$\frac{8}{16}$: Half of 16 is 8, so $\frac{8}{16}$ is equal to $\frac{1}{2}$.

$\frac{5}{5}$: $\frac{5}{5}$ is equal to 1. 1 is equal to $\frac{7}{7}$, and $\frac{7}{7} > \frac{6}{7}$, so $\frac{5}{5}$ is greater than $\frac{6}{7}$.

Least to greatest: $\frac{8}{16}, \frac{6}{7}, \frac{5}{5}$

$\frac{5}{5}$ is the greatest fraction.

UNIT 3 | LESSON 61

CONVERTING IMPROPER FRACTIONS TO WHOLE OR MIXED NUMBERS

Video Lesson

Different strategies may be used to convert to improper fractions. A sample strategy is shown for each problem below.

Top Left Box

$$\begin{aligned}\frac{11}{5} &= \frac{5}{5} + \frac{5}{5} + \frac{1}{5} \\ &= 1 + 1 + \frac{1}{5} \\ &= 2\frac{1}{5}\end{aligned}$$



Top Right Box

$$\begin{array}{r} 2\frac{2}{4} = 2\frac{1}{2} \\ 4 \overline{)10} \\ \underline{-8} \\ 2 \end{array}$$

Bottom Box

$$\begin{aligned}4\frac{5}{9} + 7\frac{8}{9} \\ &= 11\frac{13}{9} \\ &= 11 + 1\frac{4}{9} \\ &= 12\frac{4}{9}\end{aligned}$$

Practice

1. a. (given)

b. $\frac{11}{4}, 2\frac{3}{4}$

c. $\frac{23}{6}, 3\frac{5}{6}$

d. $\frac{14}{3}, 4\frac{2}{3}$

e. $\frac{53}{9}, 5\frac{8}{9}$

2. a. (given)

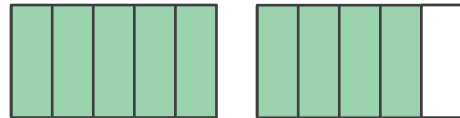
b. 9

c. 5

d. 9

3. Different strategies may be used to convert improper fractions.

a. $\begin{aligned}\frac{9}{5} &= \frac{5}{5} + \frac{4}{5} \\ &= 1 + \frac{4}{5} \\ &= 1\frac{4}{5}\end{aligned}$



b. $\begin{array}{r} 2\frac{7}{20} \\ 20 \overline{)47} \\ \underline{-40} \\ 7 \end{array}$

6. Different strategies may be used. Work for each problem is shown below.

$\frac{5}{2} = 2\frac{1}{2}$	A $\frac{4}{3} = 1\frac{1}{3}$	B $\frac{11}{6} = 1\frac{5}{6}$	C $\frac{13}{4} = 3\frac{1}{4}$
D $\frac{25}{6} = 4\frac{1}{6}$	E $\frac{31}{5} = 6\frac{1}{5}$	F $\frac{23}{3} = 7\frac{2}{3}$	G $\frac{19}{7} = 2\frac{5}{7}$
H $\frac{31}{4} = 7\frac{3}{4}$	I $\frac{24}{11} = 2\frac{2}{11}$	J $\frac{44}{5} = 8\frac{4}{5}$	K $\frac{17}{9} = 1\frac{8}{9}$
L $\frac{15}{8} = 1\frac{7}{8}$	M $\frac{15}{4} = 3\frac{3}{4}$	N $\frac{25}{12} = 2\frac{1}{12}$	O $\frac{27}{8} = 3\frac{3}{8}$

A

$$\begin{array}{r} 1\frac{1}{3} \\ 3\overline{)4} \\ \underline{-3} \\ 1 \end{array}$$

B

$$\begin{array}{r} 1\frac{5}{6} \\ 6\overline{)11} \\ \underline{-6} \\ 5 \end{array}$$

C

$$\begin{array}{r} 3\frac{1}{4} \\ 4\overline{)13} \\ \underline{-12} \\ 1 \end{array}$$

D

$$\begin{array}{r} 4\frac{1}{6} \\ 6\overline{)25} \\ \underline{-24} \\ 1 \end{array}$$

E

$$\begin{array}{r} 6\frac{1}{5} \\ 5\overline{)31} \\ \underline{-30} \\ 1 \end{array}$$

F

$$\begin{array}{r} 7\frac{2}{3} \\ 3\overline{)23} \\ \underline{-21} \\ 2 \end{array}$$

G

$$\begin{array}{r} 2\frac{5}{7} \\ 7\overline{)19} \\ \underline{-14} \\ 5 \end{array}$$

H

$$\begin{array}{r} 7\frac{3}{4} \\ 4\overline{)31} \\ \underline{-28} \\ 3 \end{array}$$

I

$$\begin{array}{r} 2\frac{2}{11} \\ 11\overline{)24} \\ \underline{-22} \\ 2 \end{array}$$

J

$$\begin{array}{r} 8\frac{4}{5} \\ 5\overline{)44} \\ \underline{-40} \\ 4 \end{array}$$

K

$$\begin{array}{r} 1\frac{8}{9} \\ 9\overline{)17} \\ \underline{-9} \\ 8 \end{array}$$

L

$$\begin{array}{r} 1\frac{7}{8} \\ 8\overline{)15} \\ \underline{-8} \\ 7 \end{array}$$

M

$$\begin{array}{r} 3\frac{3}{4} \\ 4\overline{)15} \\ \underline{-12} \\ 3 \end{array}$$

N

$$\begin{array}{r} 2\frac{1}{12} \\ 12\overline{)25} \\ \underline{-24} \\ 1 \end{array}$$

O

$$\begin{array}{r} 3\frac{3}{8} \\ 8\overline{)27} \\ \underline{-24} \\ 3 \end{array}$$

UNIT 3 | LESSON 67

ROUNDING FRACTIONS AND MIXED NUMBERS TO THE NEAREST WHOLE NUMBER

Video Lesson

blueberry cake:

Half of 11 is $5\frac{1}{2}$. 8 is more than $5\frac{1}{2}$.

$\frac{8}{11}$ is greater than $\frac{1}{2} \rightarrow$ round up

$\frac{8}{11} \rightarrow 1$

strawberry cake:

Half of 14 is 7. 5 is less than 7.

$\frac{5}{14}$ is less than $\frac{1}{2} \rightarrow$ round down

$5\frac{5}{14} \rightarrow 5$

chocolate cake:

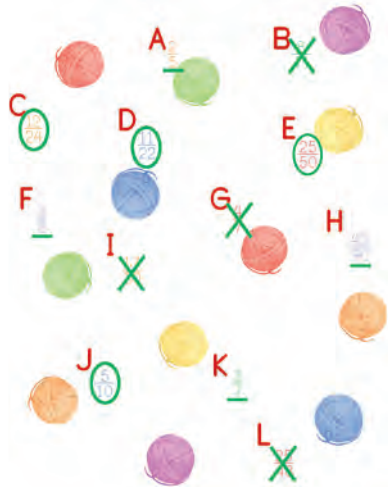
Half of 7 is $3\frac{1}{2}$. 5 is greater than $3\frac{1}{2}$.

$\frac{5}{7}$ is greater than $\frac{1}{2} \rightarrow$ round up

$3\frac{5}{7} \rightarrow 4$

Practice

1. Work for each problem is shown below.



A $\frac{2}{5}$: Half of 5 is $2\frac{1}{2}$. 2 is less than $2\frac{1}{2}$.

$\frac{2}{5}$ is less than $\frac{1}{2}$.

B $\frac{8}{11}$: Half of 11 is $5\frac{1}{2}$. 8 is greater than $5\frac{1}{2}$.

$\frac{8}{11}$ is greater than $\frac{1}{2}$.

C $\frac{12}{24}$: Half of 24 is 12.

$\frac{12}{24}$ is equal to $\frac{1}{2}$.

D $\frac{11}{22}$: Half of 22 is 11.

$\frac{11}{22}$ is equal to $\frac{1}{2}$.

E $\frac{25}{50}$: Half of 50 is 25.

$\frac{25}{50}$ is equal to $\frac{1}{2}$.

F $\frac{3}{8}$: Half of 8 is 4. 3 is less than 4.

$\frac{3}{8}$ is less than $\frac{1}{2}$.

G $\frac{4}{7}$: Half of 7 is $3\frac{1}{2}$. 4 is greater than $3\frac{1}{2}$.

$\frac{4}{7}$ is greater than $\frac{1}{2}$.

H $\frac{43}{90}$: Half of 90 is 45. 43 is less than 45.

$\frac{43}{90}$ is less than $\frac{1}{2}$.

I $\frac{17}{30}$: Half of 30 is 15. 17 is greater than 15.

$\frac{17}{30}$ is greater than $\frac{1}{2}$.

J $\frac{5}{10}$: Half of 10 is 5.

$\frac{5}{10}$ is equal to $\frac{1}{2}$.

K $\frac{3}{7}$: Half of 7 is $3\frac{1}{2}$. 3 is less than $3\frac{1}{2}$.

$\frac{3}{7}$ is less than $\frac{1}{2}$.

L $\frac{25}{48}$: Half of 48 is 24. 25 is greater than 24.

$\frac{25}{48}$ is greater than $\frac{1}{2}$.

TIME REVIEW

Practice

- I. Work for each problem on the correct path is shown below.



A $5:45 \text{ AM} + 7 \text{ minutes} = 5:52 \text{ AM}$

B $5:52 \text{ AM}$ to $6:00 \text{ AM}$ is 8 minutes.
 $15 - 8 = 7$
 $6:00 \text{ AM} + 7 \text{ minutes} = 6:07 \text{ AM}$

C $6:07 \text{ AM} + 1 \text{ hour} = 7:07 \text{ AM}$
 $7:07 \text{ AM} + 30 \text{ minutes} = 7:37 \text{ AM}$

D $7:37 \text{ AM} + 20 \text{ minutes} = 7:57 \text{ AM}$

E $7:57 \text{ AM}$ to $8:00 \text{ AM}$ is 3 minutes.
 $30 - 3 = 27$
 $8:00 \text{ AM} + 27 \text{ minutes} = 8:27 \text{ AM}$

F "Half past 12" is $12:30 \text{ PM}$.

G $12:30 \text{ PM} + 30 \text{ minutes} = 1:00 \text{ PM}$

H $1:00 \text{ PM} + 1 \text{ hour} = 2:00 \text{ PM}$
 $2:00 \text{ PM} + 15 \text{ minutes} = 2:15 \text{ PM}$

I "5 after 4" is $4:05 \text{ PM}$.

J "Half past 5" is $5:30 \text{ PM}$.

K $5:30$ to $6:00 \text{ PM}$ is 30 minutes.
 $45 - 30 = 15$
 $6:00 \text{ PM} + 15 \text{ minutes} = 6:15 \text{ PM}$

L $6:15 \text{ PM} + 30 \text{ minutes} = 6:45 \text{ PM}$

M $6:45 \text{ PM} + 1 \text{ hour} = 7:45 \text{ PM}$
 $7:45 \text{ PM}$ to $8:00 \text{ PM}$ is 15 minutes.
 $30 - 15 = 15$
 $8:00 \text{ PM} + 15 \text{ minutes} = 8:15 \text{ PM}$

MATH PUZZLES

Practice

1. Total number of animals: $120 + 30 + 90 + 60 + 60 = 360$

Animal	Ratio of Animal to Total Animals
Bison	$\frac{120}{360} = \frac{1}{3}$
Bears	$\frac{30}{360} = \frac{1}{12}$
Birds	$\frac{90}{360} = \frac{1}{4}$
Elk	$\frac{60}{360} = \frac{1}{6}$
Wolves	$\frac{60}{360} = \frac{1}{6}$

2. Trail 1 with obstacles:

$$\begin{array}{r}
 33.000 \\
 1.209 \\
 0.023 \\
 0.407 \\
 0.023 \\
 + 0.023 \\
 \hline
 34.685
 \end{array}$$

Time:

34.685 min

Trail:

1

35.662 min

3

36.826 min

2

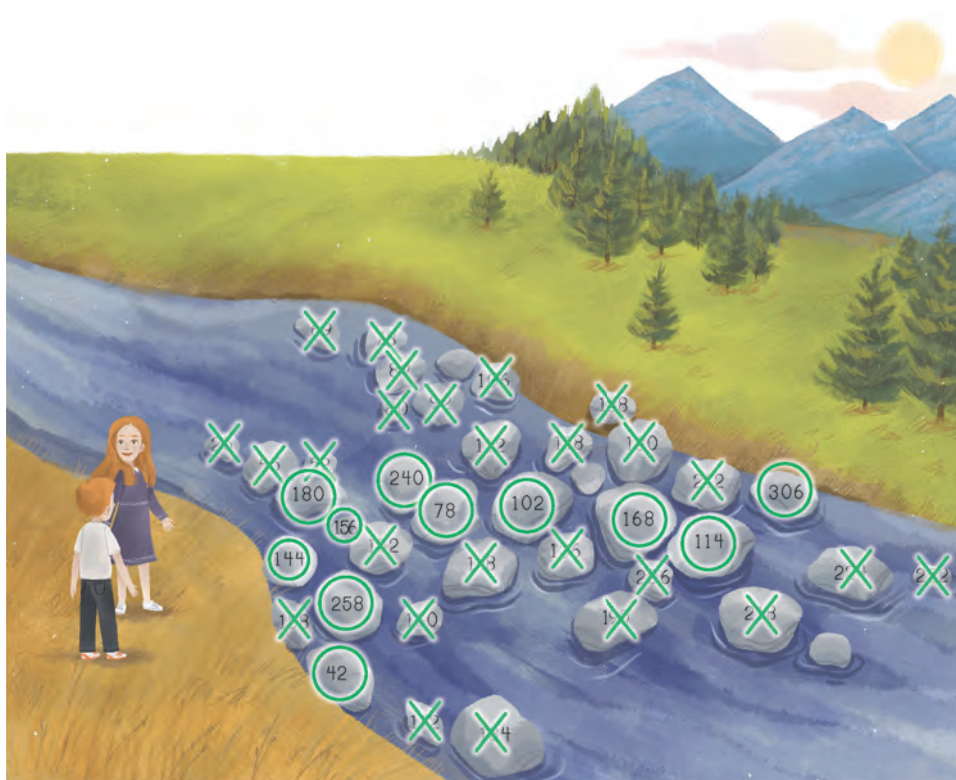
Trail 2 with obstacles:

$$\begin{array}{r}
 35.000 \\
 0.210 \\
 0.407 \\
 + 1.209 \\
 \hline
 36.826
 \end{array}$$

Trail 3 with obstacles:

$$\begin{array}{r}
 34.000 \\
 0.023 \\
 1.209 \\
 0.407 \\
 + 0.023 \\
 \hline
 35.662
 \end{array}$$

3. Detailed work is shown below.



If the number is divisible by both 2 and 3, it is also divisible by 6.

Even numbers are divisible by 2. Cross off all odd numbers. Cross off 69, 73, 89, 25, 45.

Choose a rock to start on and see if it is divisible by 3. Then look for a nearby rock that has not been crossed off and check to see if it is divisible by 3. Continue checking rocks for divisibility by 3.

Students will not need to check all rocks in the stream, but divisibility work for each even number is shown below.

106: $1 + 6 = 7$	7 is not divisible by 3, so 106 is not divisible by 3.
112: $1 + 1 + 2 = 4$	4 is not divisible by 3, so 112 is not divisible by 3.
80: $8 + 0 = 8$	8 is not divisible by 3, so 80 is not divisible by 3.
92: $9 + 2 = 11$	11 is not divisible by 3, so 92 is not divisible by 3.
130: $1 + 3 + 0 = 4$	4 is not divisible by 3, so 130 is not divisible by 3.
118: $1 + 1 + 8 = 10$	10 is not divisible by 3, so 118 is not divisible by 3.
128: $1 + 2 + 8 = 11$	11 is not divisible by 3, so 128 is not divisible by 3.
136: $1 + 3 + 6 = 10$	10 is not divisible by 3, so 136 is not divisible by 3.
52: $5 + 2 = 7$	7 is not divisible by 3, so 52 is not divisible by 3.
240: $2 + 4 + 0 = 6$	6 is divisible by 3, so 240 is divisible by 3.
148: $1 + 4 + 8 = 13$	13 is not divisible by 3, so 148 is not divisible by 3.
224: $2 + 2 + 4 = 8$	8 is not divisible by 3, so 224 is not divisible by 3.
306: $3 + 0 + 6 = 9$	9 is divisible by 3, so 306 is divisible by 3.
180: $1 + 8 + 0 = 9$	9 is divisible by 3, so 180 is divisible by 3.

CIRCLES

Video Lesson

Left Problem

circle name: $\odot X$ radius name (possible answers): $\overline{ZX}$, $\overline{XZ}$, $\overline{WX}$, $\overline{XW}$, $\overline{YX}$, or $\overline{XY}$ diameter (possible answers): $\overline{WY}$ or $\overline{YW}$

radius measure: 12 in

diameter measure: $12 \text{ in} \times 2 = 24 \text{ in}$

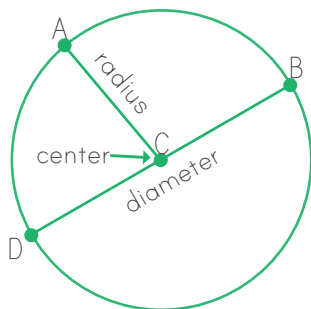
Right Problem

circle name: $\odot Q$ radius name (possible answers): $\overline{RQ}$, $\overline{QR}$, $\overline{SQ}$, $\overline{QS}$, $\overline{TQ}$, or $\overline{QT}$ diameter (possible answers): $\overline{ST}$ or $\overline{TS}$ radius measure: $5 \text{ ft} \div 2 = 2.5 \text{ ft}$ or $2\frac{1}{2} \text{ ft}$

diameter measure: 5 ft

Practice

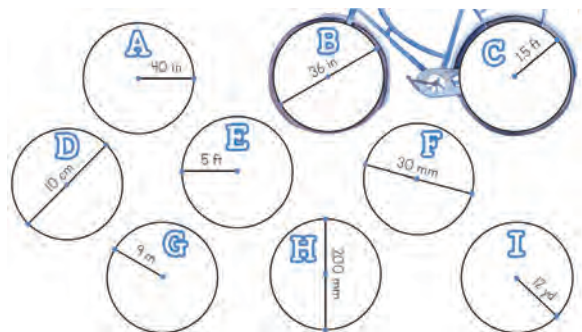
1. Answers may vary, but the diameter should be across the circle through the center. A radius should be from the center of the circle to the edge. The circumference is around the whole circle.



2. a. circle: $\odot B$
radii (possible answers): $\overline{AB}$, $\overline{BA}$, $\overline{DB}$, $\overline{BD}$, $\overline{CB}$, or $\overline{BC}$
diameter (possible answers): $\overline{AD}$ or $\overline{DA}$
- b. circle: $\odot G$
radii (possible answers): $\overline{EG}$, $\overline{GE}$, $\overline{HG}$, $\overline{GH}$, $\overline{FG}$, or $\overline{GF}$
diameter (possible answers): $\overline{EH}$ or $\overline{HE}$
- c. circle: $\odot K$
radii (possible answers): $\overline{JK}$, $\overline{KJ}$, $\overline{MK}$, $\overline{KM}$, $\overline{LK}$, or $\overline{KL}$
diameter (possible answers): $\overline{JM}$ or $\overline{MJ}$

3. a. $18 \text{ m} \div 2 = 9 \text{ m}$
b. $50 \text{ in} \div 2 = 25 \text{ in}$
c. $48 \text{ yd} \div 2 = 24 \text{ yd}$
4. a. $8 \text{ in} \times 2 = 16 \text{ in}$
b. $4.3 \text{ ft} \times 2 = 8.6 \text{ ft}$
c. $22 \text{ m} \times 2 = 44 \text{ m}$
5. a. radius = $42 \text{ m} \div 2 = 21 \text{ m}$
diameter = 42 m
b. radius = 9 ft
diameter = $9 \text{ ft} \times 2 = 18 \text{ ft}$

6. Work for each problem is shown on the next page.



UNIT ASSESSMENT

Converting Between Improper Fractions & Mixed Numbers

1. a. $4 \overline{)21} \begin{array}{r} 5\frac{1}{4} \\ -20 \\ \hline 1 \end{array}$

b. $2 \overline{)15} \begin{array}{r} 7\frac{1}{2} \\ -14 \\ \hline 1 \end{array}$

2. a. $4 \overline{)22} \begin{array}{r} 5\frac{2}{4} \\ \times 5 \\ \hline 25 \end{array}$
 $\frac{4 \times 5 + 2}{5} = \frac{20 + 2}{5} = \frac{22}{5}$

b. $5 \overline{)59} \begin{array}{r} 11\frac{9}{10} \\ \times 10 \\ \hline 110 \end{array}$
 $\frac{5 \times 10 + 9}{10} = \frac{50 + 9}{10} = \frac{59}{10}$

Converting Between Improper Fractions & Mixed Numbers Additional Practice

1. a. $5 \overline{)32} \begin{array}{r} 6\frac{2}{5} \\ -30 \\ \hline 2 \end{array}$

b. $6 \overline{)21} \begin{array}{r} 3\frac{3}{6} \\ -18 \\ \hline 3 \end{array} = 3\frac{1}{2}$

2. a. $1 \overline{)4} \begin{array}{r} 4\frac{4}{5} \\ \times 5 \\ \hline 20 \end{array}$
 $\frac{1 \times 5 + 4}{5} = \frac{5 + 4}{5} = \frac{9}{5}$

b. $9 \overline{)27} \begin{array}{r} 3\frac{2}{3} \\ \times 3 \\ \hline 27 \end{array}$
 $\frac{9 \times 3 + 2}{3} = \frac{27 + 2}{3} = \frac{29}{3}$

Greatest Common Factor

1. 18: 1, 2, 3, 6, 9, 18
 27: 1, 3, 9, 27

GCF of 18 & 27: 9

Greatest Common Factor Additional Practice

1. 12: 1, 2, 3, 4, 6, 12
 30: 1, 2, 3, 5, 6, 10, 15, 30

GCF of 12 & 30: 6

Using the LCM to Find Common Denominators

- l. a. multiples of 3: 3, 6, 9, 12, 15
multiples of 2: 2, 4, 6, 8, 10

$$\frac{1}{3} = \frac{2}{6} \qquad \frac{1}{2} = \frac{3}{6}$$

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

- b. multiples of 4: 4, 8, 12, 16, 20
multiples of 5: 5, 10, 15, 20, 25

$$\frac{3}{4} = \frac{15}{20} \qquad \frac{1}{5} = \frac{4}{20}$$

$$\frac{3}{4} - \frac{1}{5} = \frac{15}{20} - \frac{4}{20} = \frac{11}{20}$$

Using the LCM to Find Common Denominators Additional Practice

- l. a. multiples of 6: 6, 12, 18, 24, 30
multiples of 8: 8, 16, 24, 32, 40

$$\frac{5}{6} = \frac{20}{24} \qquad \frac{1}{8} = \frac{3}{24}$$

$$\frac{5}{6} + \frac{1}{8} = \frac{20}{24} + \frac{3}{24} = \frac{23}{24}$$

- b. multiples of 10: 10, 20, 30, 40, 50
multiples of 5: 5, 10, 15, 20, 25

$$\frac{9}{10} = \frac{9}{10} \qquad \frac{2}{5} = \frac{4}{10}$$

$$\frac{9}{10} - \frac{2}{5} = \frac{9}{10} - \frac{4}{10} = \frac{5}{10} = \frac{1}{2}$$

Converting Fractions to Percents

l. a. $\frac{7}{10} \times \frac{10}{10} = \frac{70}{100} = 70\%$

b. $\frac{3}{20} \times \frac{5}{5} = \frac{15}{100} = 15\%$

c. $\frac{3}{4} \times \frac{25}{25} = \frac{75}{100} = 75\%$

Converting Fractions to Percents Additional Practice

l. a. $\frac{3}{5} \times \frac{20}{20} = \frac{60}{100} = 60\%$

b. $\frac{22}{25} \times \frac{4}{4} = \frac{88}{100} = 88\%$

c. $\frac{43}{50} \times \frac{2}{2} = \frac{86}{100} = 86\%$

FINDING AVERAGES WITH REMAINDERS

Practice

1. a. $10 + 10 + 18 + 2 = 40$

There are 4 numbers.

$$40 \div 4 = 10$$

mean: 10

b. $11 + 14 + 62 + 77 + 80 = 244$

There are 5 numbers.

$$\begin{array}{r} 48.8 \\ 5 \overline{)244.0} \end{array}$$

mean: 48.8

2. a. 0.4, 0.8, 1.5, 4.6, 8.8

median: 1.5

b. 45, 64, 68, 82

$$64 + 68 = 132$$

There are 2 numbers.

$$\begin{array}{r} 66 \\ 2 \overline{)132} \end{array}$$

median: 66

3. a. 55, 62, 64, 64, 73, 74, 74

modes: 64 and 74

b. 87, 100, 110, 120, 120, 122

mode: 120

4. a. 8, 12, 21

$$21 - 8 = 13$$

range: 13

b. 25, 44, 68, 75, 93

$$93 - 25 = 68$$

range: 68

5. a. least to greatest: 9, 9, 12, 14

$$9 + 9 + 12 + 14 = 44$$

There are 4 numbers.

$$44 \div 4 = 11$$

mean: 11

$$9, 9, 12, 14$$

$$9 + 12 = 21$$

There are 2 numbers.

$$21 \div 2 = 10.5$$

median: 10.5

$$9, 9, 12, 14$$

mode: 9

$$9, 12, 14$$

$$14 - 9 = 5$$

range: 5

b. least to greatest: 7, 12, 12, 15, 56, 87

$$7 + 12 + 12 + 15 + 56 + 87 = 189$$

There are 6 numbers.

$$\begin{array}{r} 31.5 \\ 6 \overline{)189.0} \end{array}$$

mean: 31.5

$$7, 12, 12, 15, 56, 87$$

$$12 + 15 = 27$$

There are 2 numbers.

$$\begin{array}{r} 13.5 \\ 2 \overline{)27.0} \end{array}$$

median: 13.5

$$7, 12, 12, 15, 56, 87$$

mode: 12

Solid 2:

$$V = \pi r^2 h$$

$$V \approx 3.14 \times (5 \text{ units})^2 \times 10 \text{ units}$$

$$V \approx 3.14 \times 25 \text{ units}^2 \times 10 \text{ units}$$

$$V \approx 3.14 \times 250 \text{ units}^3$$

$$V \approx 785 \text{ units}^3$$

Solid 3:

$$V = \ell wh$$

$$V = 7 \text{ units} \times 7 \text{ units} \times 7 \text{ units}$$

$$V = 49 \text{ units}^2 \times 7 \text{ units}$$

$$V = 343 \text{ units}^3$$

Solid 4:

$$V = \pi r^2 h$$

$$V \approx 3.14 \times (2 \text{ units})^2 \times 13 \text{ units}$$

$$V \approx 3.14 \times 4 \text{ units}^2 \times 13 \text{ units}$$

$$V \approx 3.14 \times 52 \text{ units}^3$$

$$V \approx 163.28 \text{ units}^3$$

Solid 5:

$$V = \ell wh$$

$$V = 6 \text{ units} \times 4.9 \text{ units} \times 2 \text{ units}$$

$$V = 12 \text{ units}^2 \times 4.9 \text{ units}$$

$$V = 58.8 \text{ units}^3$$

Solid 6:

$$V = \ell wh$$

$$V = 7 \text{ units} \times 2.5 \text{ units} \times 9 \text{ units}$$

$$V = 63 \text{ units}^2 \times 2.5 \text{ units}$$

$$V = 157.5 \text{ units}^3$$

a. **I have a height greater than 6 units.** This could be solids 1, 2, 3, 4, or 6.

I have six faces. This could be solids 1, 3, or 6.

My volume is greater than 60 cubic units.

This could be solids 1, 3, or 6.

The measure of my length does not equal my width. This is solid 6.

My number is 6.

b. **I am not a cube.** This could be solids 1, 2, 4, 5, or 6.

I have two circular faces. This could be solids 2 and 4.

My diameter has the same measure as my height. This is solid 2.

My number is 2.

Review

1. a. $\frac{2}{5} \rightarrow 5 \overline{)2.0}$

$$\begin{array}{r} 0.4 \\ 5 \overline{)2.0} \\ \underline{-2.0} \\ 0 \end{array}$$

$$0.4 \rightarrow 0.40\%$$

$$\frac{2}{5} = 0.4 = 40\%$$

b. $\frac{17}{5} \rightarrow 5 \overline{)17.0}$

$$\begin{array}{r} 3.4 \\ 5 \overline{)17.0} \\ \underline{-15} \\ 2.0 \\ \underline{-2.0} \\ 0 \end{array}$$

$$3.4 \rightarrow 3.40\%$$

$$\frac{17}{5} = 3.4 = 340\%$$

2. $80 + 94 + 96 + 100 + 112 = 482$

There are 5 numbers.

$$\begin{array}{r} 96.4 \\ 5 \overline{)482.0} \\ \underline{-45} \\ 32 \\ \underline{-30} \\ 2.0 \\ \underline{-2.0} \\ 0 \end{array}$$

mean: 96.4

80, 94, 96, 100, 112

median: 96

80, 94, 96, 100, 112

mode: no mode

UNIT 4 | LESSON 104

BUILD A HOUSE: DAY 2

1. a. Answers will vary.
- b. Answers will vary.
- c. Answers will vary based on the student's house size. An example calculation for a house that is 30 units long is shown below.

$$\frac{1 \text{ unit}}{3 \text{ ft}} = \frac{30 \text{ units}}{\ell}$$

(Note: In the original image, green arrows indicate that the numerator 1 unit is multiplied by 30 to get 30 units, and the denominator 3 ft is multiplied by 30 to get \ell.)

$$\ell = 90 \text{ ft}$$

Actual length of house: 90 ft

- d. Answers will vary based on the student's house size. An example calculation for a house that is 20 units wide is shown below.

$$\frac{1 \text{ unit}}{3 \text{ ft}} = \frac{20 \text{ units}}{w}$$

(Note: In the original image, green arrows indicate that the numerator 1 unit is multiplied by 20 to get 20 units, and the denominator 3 ft is multiplied by 20 to get w.)

$$w = 60 \text{ ft}$$

Actual width of house: 60 ft

- e. Answers will vary based on the student's house size, but the student should have multiplied the length by the width to find the area (in ft^2).

2. a. **area**

Answers will vary based on the student's living room size. An example calculation for a living room that is $10 \text{ ft} \times 15 \text{ ft}$ is shown below.

$$A = \ell w$$

$$A = 10 \text{ ft} \times 15 \text{ ft}$$

$$A = 150 \text{ ft}^2$$

Amount of carpet: 150 ft^2

$$150 \text{ ft}^2 \times \$2.04/\text{ft}^2 = \$306.00$$

Cost: \$306.00

UNIT 4 | LESSON 107

PROBLEM SOLVING

Video Lesson

$$18 : 54 \text{ or } \frac{18}{54}$$

$$\frac{18}{54} = \frac{1}{3}$$

÷ 18
÷ 18

$$1 : 3 \text{ or } \frac{1}{3}$$

Practice

1.

twice as many	addition (+)
difference	subtraction (-)
of	multiplication (×)
altogether	division (÷)
remaining	
half	
fewer	
sum	
share equally	
2. Students should have checked off the box for each instruction as they completed it.
 - a. **Problem A.** Jon makes cards for people in his neighborhood. Each card costs \$0.45 to make. If Jon delivers 8 cards each week, how many cards does he deliver in 12 weeks?
 operation(s) needed: multiplication
 8 cards per week × 12 weeks = 96 cards
 answer: 96 cards
 - b. **Problem B.** Makenna and Blake made cookies. Makenna made 24 cookies, and Blake made twice as many as Makenna. How many cookies did they make altogether?

operation(s) needed: multiplication, addition

number of cookies made by Blake: $24 \times 2 = 48$

cookies made altogether:

$$24 \text{ cookies} + 48 \text{ cookies} = 72 \text{ cookies}$$

answer: 72 cookies

- c. **Problem C.** Marni practiced the cello for 20 minutes on 5 different days last week. She had a recital coming up, so she practiced 35 minutes on a sixth day. Her neighborhood recital lasted $1\frac{1}{2}$ hours. For how many minutes altogether did Marni practice the cello last week?

operation(s) needed: multiplication, addition

minutes practiced the first 5 days:

$$20 \text{ minutes} \times 5 = 100 \text{ minutes}$$

total minutes practiced:

$$100 \text{ minutes} + 35 \text{ minutes} = 135 \text{ minutes}$$

answer: 135 minutes

- d. **Problem D.** Jace loves to play soccer 3 days each week. His team ordered 16 pizzas after a game, and $\frac{1}{4}$ of the pizzas had pepperoni. Of the remaining pizzas, $\frac{1}{2}$ were cheese. How many fewer pepperoni pizzas than cheese pizzas did the team order?

UNIT 4 | LESSON 108

**CAMPGROUND
PROBLEM SOLVING**

Practice

1. a. $6 \text{ people} \times 5 \text{ s'mores per person} = 30 \text{ s'mores}$

1 bag of marshmallows makes 40 s'mores. 40 is greater than 30.

marshmallows: 1 package

$\frac{1}{3}$ bar of chocolate per s'more $\times 30 \text{ s'mores} = 10 \text{ bars of chocolate needed}$

1 package of chocolate bars contains 8 bars, so 2 packages are needed.

chocolate bars: 2 packages

1 graham cracker per s'more $\times 30 \text{ s'mores} = 30 \text{ graham crackers needed}$

3 packages per box $\times 9 \text{ graham crackers per package} = 27 \text{ graham crackers per box}$

1 box of graham crackers contains 27 crackers, so 2 boxes are needed.

graham crackers: 2 packages

- b. $40 \text{ s'mores per bag of marshmallows} \times 2 \text{ bags} = 80 \text{ s'mores}$

$8 \text{ bars of chocolate per package} \times 3 \text{ s'mores per bar of chocolate} = 24 \text{ s'mores per package}$

$24 \text{ s'mores per package} \times 2 \text{ packages} = 48 \text{ s'mores}$

$3 \text{ packages per box} \times 9 \text{ graham crackers per package} = 27 \text{ graham crackers per box}$

$27 \text{ s'mores per box} \times 2 \text{ boxes} = 54 \text{ s'mores}$

Chocolate bars have the fewest servings per package, and two packages make 48 s'mores, so with two packages of ingredients, 48 s'mores can be made.

2. Carlos: $5^3 \text{ ants} = 5 \times 5 \times 5 \text{ ants} = 125 \text{ ants}$

Matias: $3^4 + 2^5 \text{ ants} = 3 \times 3 \times 3 \times 3 + 2 \times 2 \times 2 \times 2 \times 2 \text{ ants} = 81 \text{ ants} + 32 \text{ ants} = 113 \text{ ants}$

$125 > 113$

$125 - 113 = 12$

Carlos, 12 ants

3. $6 \text{ foil packet dinners} \times 0.75 \text{ potatoes per packet}$

$$\begin{array}{r} 0.75 \\ \times 6 \\ \hline 4.50 \end{array}$$

4.5 or $4\frac{1}{2}$ potatoes

$6 \text{ foil packet dinners} \times 1.75 \text{ carrots per packet}$

$$\begin{array}{r} 1.75 \\ \times 6 \\ \hline 10.50 \end{array}$$

10.5 or $10\frac{1}{2}$ carrots

COURSE ASSESSMENT

Exponents & Multiplying & Dividing by Powers of 10

I. a. $3^3 = 3 \times 3 \times 3 = 27$

b. $2^5 = 2 \times 2 \times 2 \times 2 \times 2 = 32$

c. $12^0 = 1$

d. $86.32 \times 10^5 = 86.32000 \times 10^5 = 8,632,000$

e. $9,450,172 \div 10^6 = 9,450,172 \div 10^6 = 9.450172$

Exponents & Multiplying & Dividing by Powers of 10 Additional Practice

I. a. $2^4 = 2 \times 2 \times 2 \times 2 = 16$

b. $13^0 = 1$

c. $5^3 = 5 \times 5 \times 5 = 125$

d. $757,100 \div 10^3 = 757,100 \div 10^3 = 757.1$

e. $5.164 \times 10^4 = 5.1640 \times 10^4 = 51,640$

Perfect Squares & Square Roots

I. a. $9^2 = 81$

b. $6^2 = 36$

c. $13^2 = 169$

d. $\sqrt{49} = 7$

e. $\sqrt{121} = 11$

f. $\sqrt{144} = 12$

Perfect Squares & Square Roots Additional Practice

I. a. $11^2 = 121$

b. $8^2 = 64$

c. $12^2 = 144$

d. $\sqrt{16} = 4$

e. $\sqrt{169} = 13$

f. $\sqrt{64} = 8$

Adding, Subtracting, Multiplying & Dividing Decimal Numbers

1. a.
$$\begin{array}{r} 7\ 9\ 9 \\ 8.000 \\ - 3.143 \\ \hline 4.857 \end{array}$$

b.
$$\begin{array}{r} 1 \\ 6.032 \\ \times 1.4 \\ \hline 24128 \\ + 60320 \\ \hline 8.4448 \end{array}$$

2. a.
$$\begin{array}{r} 3.01 \\ 3 \overline{)9.03} \end{array}$$

b. $45.92 \div 0.21 \rightarrow 45.92 \div 0.21 \rightarrow 4592 \div 21$

$$\begin{array}{r} 218.66... = 218.\overline{6} \\ 21 \overline{)4592.00} \\ \underline{-42} \\ 39 \\ \underline{-21} \\ 182 \\ \underline{-168} \\ 140 \\ \underline{-126} \\ 140 \\ \underline{-126} \\ 14 \end{array}$$

Adding, Subtracting, Multiplying & Dividing Decimal Numbers Additional Practice

1. a.
$$\begin{array}{r} 8\ 9\ 9 \\ 9.000 \\ - 5.274 \\ \hline 3.726 \end{array}$$

b.
$$\begin{array}{r} 1 \\ 5.301 \\ \times 4.2 \\ \hline 10602 \\ + 212040 \\ \hline 22.2642 \end{array}$$

2. a.
$$\begin{array}{r} 3.02 \\ 4 \overline{)12.08} \end{array}$$

b. $3.5 \div 0.06 \rightarrow 3.50 \div 0.06 \rightarrow 350 \div 6$

$$\begin{array}{r} 58.33... = 58.\overline{3} \\ 6 \overline{)350.00} \\ \underline{-30} \\ 50 \\ \underline{-48} \\ 20 \\ \underline{-18} \\ 20 \\ \underline{-18} \\ 2 \end{array}$$

Percent of a Number

1. a. $64 \div 4 = 16$
25% of 64 = 16

b. 1.2×45

$$\begin{array}{r} 1 \\ 45 \\ \times 1.2 \\ \hline 90 \\ + 450 \\ \hline 54.0 \end{array}$$

120% of 45 = 54