Name _____   Period _____

Unit 4 Dividing Fractions Week of 2/10/20

Learning Targets from 6th Grade Common Core State Standards:

Lesson 11 Using an algorithm to divide fractions
- ☐ I can describe and apply a rule to divide numbers by any fraction.

Lesson 12 Fractional Lengths
- ☐ I can use division and multiplication to solve problems involving fractional lengths.

Lesson 13 Rectangles with Fractional Lengths
- ☐ I can use division and multiplication to solve problems involving areas of rectangles with fractional side lengths.

Lesson 14 Fractional Lengths with Triangles and Prisms
- ☐ I can use division and multiplication to solve problems involving areas of triangles with fractional bases and heights.
- ☐ I can explain how to find the volume of a rectangular prism using cubes that have a unit fraction as their edge length.
- ☐ I know how to find the volume of a rectangular prism even when the edge lengths are not whole numbers.

Lesson 15 Volume of Prisms
- ☐ I can solve volume problems that involve fractions.

This Week's Vocabulary Words:

multiplication   division   quotient   divisor   group

Homework is due the following day.

Day	Class work—All in Spiral using iPad	Homework	Complete	Correct
Monday	Lesson 11 Using an Algorithm to Divide Fractions 11 PDF p. 47	Lesson 11 Practice—TRY every problem	/4	/19
Tuesday	Lesson 12 Fractional lengths PDF page 51	Lesson 12 Practice—TRY every problem	/4	/12
Wednesday	Lesson 13 Rectangles with Fractional Side Lengths PDF p. 56	Lesson 13 Practice All—TRY every problem	/4	/16
Thursday	Lesson14 Fractional Lengths PDF p. 62	Lesson14 Green Practice All—TRY every problem	/4	/15
Friday	Lots of practice!	None		
		Total	/16	
		Quality	/4	
		Total	/20	

Homework Quality—Remember, if you don't know how to complete a problem you should read it again and write down the information you have, draw a picture, or write a question you have, please do not leave blank or write "?" or idk. You can also come in and get help before school☺!

- ☐ Work is *thorough* with *detailed* explanations (2 pts)
- ☐ Homework is corrected (with additions needed) in a different color pen/pencil (2 pts)

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Unit 4, Lesson 11: Using an Algorithm to Divide Fractions

1. Select **all** statements that show correct reasoning for finding $\frac{14}{15} \div \frac{7}{5}$.

    A. Multiplying $\frac{14}{15}$ by 5 and then by $\frac{1}{7}$.

    B. Dividing $\frac{14}{15}$ by 5, and then multiplying by $\frac{1}{7}$.

    C. Multiplying $\frac{14}{15}$ by 7, and then multiplying by $\frac{1}{5}$.

    D. Multiplying $\frac{14}{15}$ by 5 and then dividing by 7.

2. Clare said that $\frac{4}{3} \div \frac{5}{2}$ is $\frac{10}{3}$. She reasoned: $\frac{4}{3} \cdot 5 = \frac{20}{3}$ and $\frac{20}{3} \div 2 = \frac{10}{3}$.

    Explain why Clare's answer and reasoning are incorrect. Find the correct quotient.

3. Find the value of $\frac{15}{4} \div \frac{5}{8}$. Show your reasoning.

4. Kiran has $2\frac{3}{4}$ pounds of flour. When he divides the flour into equal-sized bags, he fills $4\frac{1}{8}$ bags. How many pounds fit in each bag?

    Write a multiplication equation and a division equation to represent the question and then answer the question. Show your reasoning.

5. Divide $4\frac{1}{2}$ by the following unit fractions. *other side*

NAME $4 \frac{1}{2} \div$ each of the following   DATE   PERIOD

/4   a. $\frac{1}{8}$ b. $\frac{1}{4}$ c. $\frac{1}{6}$

(from Unit 4, Lesson 10)

6. After charging for $\frac{1}{3}$ of an hour, a phone is at $\frac{2}{5}$ of its full power. How long will it take the phone to charge completely?

Decide whether each equation can represent the situation.

/4   a. $\frac{1}{3} \cdot ? = \frac{2}{5}$ c. $\frac{2}{5} \div \frac{1}{3} = ?$

b. $\frac{1}{3} \div \frac{2}{5} = ?$ d. $\frac{2}{5} \cdot ? = \frac{1}{3}$

(from Unit 4, Lesson 9)

7. Elena and Noah are each filling a bucket with water. Noah's bucket is $\frac{2}{5}$ full and the water weighs $2\frac{1}{2}$ pounds. How much does Elena's bucket weigh if her bucket is full and her bucket is identical to Noah's?

/2   a. Write multiplication and division equations to represent the question.

b. Draw a diagram to show the relationship between the quantities and to answer the question.
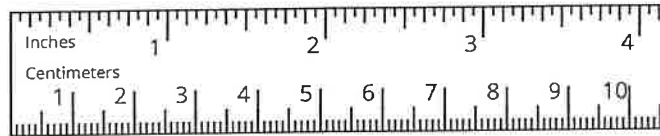
(from Unit 4, Lesson 8)

NAME   DATE   PERIOD

/12

Unit 4, Lesson 12: Fractional Lengths

1. One inch is around $2\frac{11}{20}$ centimeters.

a. How many centimeters long is 3 inches? Show your reasoning.

b. What fraction of an inch is 1 centimeter? Show your reasoning.

/3

c. What question can be answered by finding $10 \div 2\frac{11}{20}$?

2. A zookeeper is $6\frac{1}{4}$ feet tall. A young giraffe in his care is $9\frac{3}{8}$ feet tall.

a. How many times as tall as the zookeeper is the giraffe?

b. What fraction of the giraffe's height is the zookeeper's height?

/2

3. A rectangular bathroom floor is covered with square tiles that are $1\frac{1}{2}$ feet by $1\frac{1}{2}$ feet. The length of the bathroom floor is $10\frac{1}{2}$ feet and the width is $6\frac{1}{2}$ feet.

a. How many tiles does it take to cover the length of the floor?

b. How many tiles does it take to cover the width of the floor?

/2

4. The Food and Drug Administration (FDA) recommends a certain amount of nutrient intake per day called the "daily value." Food labels usually show percentages of the daily values for several different nutrients—calcium, iron, vitamins, etc.

   In $\frac{3}{4}$ cup of oatmeal, there is $\frac{1}{10}$ of the recommended daily value of iron. What fraction of the daily recommended value of iron is in 1 cup of oatmeal?

   Write a multiplication equation and a division equation to represent the question, and then answer the question. Show your reasoning.

/2

   (from Unit 4, Lesson 11)

5. What fraction of $\frac{1}{2}$ is $\frac{1}{3}$? Draw a tape diagram to represent and answer the question. Use graph paper if needed.

/1

   (from Unit 4, Lesson 7)

6. Noah says, "There are $2\frac{1}{2}$ groups of $\frac{4}{5}$ in 2." Do you agree with his statement? Draw a tape diagram to show your reasoning. Use graph paper, if needed.

   (from Unit 4, Lesson 6)

/2

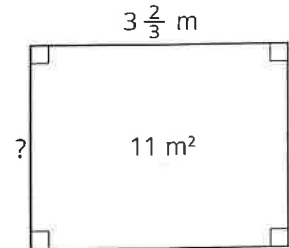NAME   DATE   PERIOD

Unit 4, Lesson 13: Rectangles with Fractional Side Lengths

1. a. Find the unknown side length of the rectangle if its area is 11 m². Show your reasoning.

    $3\frac{2}{3}$ m

    ?   11 m²

    b. Check your answer by multiplying it by the given side length ($3\frac{2}{3}$). Is the resulting product 11? If not, revisit your work for the first question.

2. A worker is tiling the floor of a rectangular room that is 12 feet by 15 feet. The tiles are square with side lengths $1\frac{1}{3}$ feet. How many tiles are needed to cover the entire floor? Show your reasoning.

3. A television screen has length $16\frac{1}{2}$ inches, width w inches, and area 462 square inches. Select **all** equations that represent the relationship of the side lengths and area of the television.

   A. $w \cdot 462 = 16\frac{1}{2}$

   B. $16\frac{1}{2} \cdot w = 462$

   C. $462 \div 16\frac{1}{2} = w$

   D. $462 \div w = 16\frac{1}{2}$

   E. $16\frac{1}{2} \cdot 462 = w$

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4. The area of a rectangle is $17\frac{1}{2}$ in² and its shorter side is $3\frac{1}{2}$ in. Draw a diagram that shows this information. What is the length of the longer side?

5. A bookshelf is 42 inches long.

   a. How many books of length $1\frac{1}{2}$ inches will fit on the bookshelf? Explain your reasoning.

   b. A bookcase has 5 of these bookshelves. How many feet of shelf space is there? Explain your reasoning.

   (from Unit 4, Lesson 12)

6. Find the value of $\frac{5}{32} \div \frac{25}{4}$. Show your reasoning.

   (from Unit 4, Lesson 11)

7. How many groups of $1\frac{2}{3}$ are in each of the following quantities?

   a. $1\frac{5}{6}$ b. $4\frac{1}{3}$ c. $\frac{5}{6}$

   (from Unit 4, Lesson 6)

8. It takes $1\frac{1}{4}$ minutes to fill a 3-gallon bucket of water with a hose. At this rate, how long does it take to fill a 50-gallon tub? If you get stuck, consider using the table.

   (from Unit 2, Lesson 14)
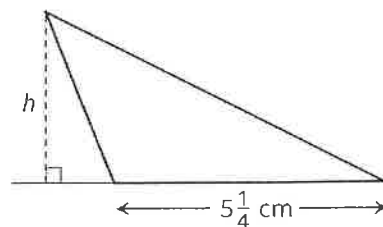
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Unit 4, Lesson 14: Fractional Lengths in Triangles and Prisms

1. Clare is using little wooden cubes with edge length $\frac{1}{2}$ inch to build a larger cube that has edge length 4 inches. How many little cubes does she need? Explain your reasoning.

2. The triangle has an area of $7\frac{7}{8}$ cm² and a base of $5\frac{1}{4}$ cm.

   What is the length of h? Explain your reasoning.

$5\frac{1}{4}$ cm

3. a. Which of the following expressions can be used to find how many cubes with edge length of $\frac{1}{3}$ unit fit in a prism that is 5 units by 5 units by 8 units? Explain or show your reasoning.

   i. $(5 \cdot \frac{1}{3}) \cdot (5 \cdot \frac{1}{3}) \cdot (8 \cdot \frac{1}{3})$

   ii. $5 \cdot 5 \cdot 8$

   iii. $(5 \cdot 3) \cdot (5 \cdot 3) \cdot (8 \cdot 3)$

   iv. $(5 \cdot 5 \cdot 8) \cdot (\frac{1}{3})$

   b. Mai says that we can also find the answer by multiplying the edge lengths of the prism and then multiplying the result by 27. Do you agree with her statement? Explain your reasoning.

4. A builder is building a fence with $6\frac{1}{4}$-inch-wide wooden boards, arranged side-by-side with no gaps.
   on back

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How many boards are needed to build a fence that is 150 inches long? Show your reasoning.

1

(from Unit 4, Lesson 12)

5. Find the value of each expression. Show your reasoning and check your answer.

   a. $2\frac{1}{7} \div \frac{2}{7}$

   b. $\frac{17}{20} \div \frac{1}{4}$

/2

(from Unit 4, Lesson 12)

6. A bucket contains $11\frac{2}{3}$ gallons of water and is $\frac{5}{6}$ full. How many gallons of water would be in a full bucket?

   Write a multiplication and a division equation to represent the situation, and then find the answer. Show your reasoning.

/2

(from Unit 4, Lesson 11)

7. There are 80 kids in a gym. 75% are wearing socks. How many are *not* wearing socks? If you get stuck, consider using a tape diagram showing sections that each represent 25% of the kids in the gym.

1

(from Unit 3, Lesson 12)

8.   a. Lin wants to save $75 for a trip to the city. If she has saved $37.50 so far, what percentage of her goal has she saved? What percentage remains?

     b. Noah wants to save $60 so that he can purchase a concert ticket. If he has saved $45 so far, what percentage of his goal has he saved? What percentage remains?

/2