

Key

NAME

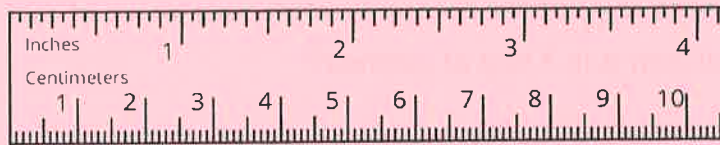
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PERIOD

Unit 4, Lesson 12: Fractional Lengths

choose any 4 problems

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



a. How many centimeters long is 3 inches?

Show your reasoning.

$$\frac{3}{1} \times 2\frac{11}{20}$$

$$\frac{3}{1} \times \frac{51}{20} = \frac{153}{20} = 7\frac{13}{20}$$

b. What fraction of an inch is 1 centimeter?

Show your reasoning.

$$1 \text{ cm} \div 2\frac{11}{20}$$

$$1 \div \frac{51}{20} = 1 \times \frac{20}{51} = \frac{20}{51}$$

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

how many inches in 10cm

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?

$$9\frac{3}{8} \div 6\frac{1}{4}$$

$$\frac{75}{8} \div \frac{25}{4} = \frac{75}{8} \times \frac{4}{25} = \frac{300}{200}$$

$$\frac{3}{2} = 1\frac{1}{2} \text{ times}$$

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

$$6\frac{1}{4} \div 9\frac{3}{8}$$

$$\frac{25}{4} \div \frac{75}{8}$$

$$\frac{25}{4} \times \frac{8}{75} = \frac{200}{300} = \frac{2}{3} \text{ times}$$

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?

$$10\frac{1}{2} \div 1\frac{1}{2}$$

$$\frac{21}{2} \div \frac{3}{2} = \frac{21}{3} = 7 \text{ tiles}$$

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

$$6\frac{1}{2} \div 1\frac{1}{2}$$

$$\frac{13}{2} \div \frac{3}{2} = \frac{13}{3} = 4\frac{1}{3} \text{ tiles}$$

$$\text{or } \frac{21}{2} \times \frac{2}{3} = \frac{42}{6} = 7 \text{ tiles}$$

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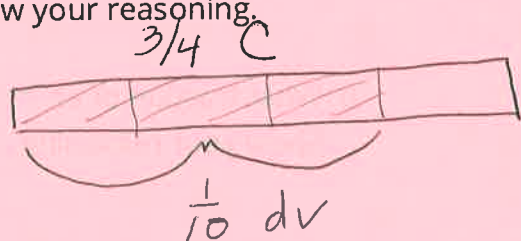
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Challenging One - I did it backwards first 😊

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.



$$\frac{3}{4} \times ? = \frac{1}{10}$$

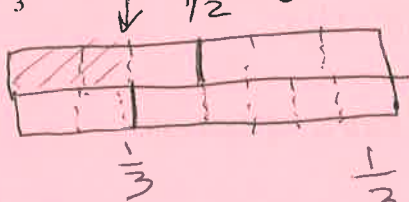
$$\frac{1}{10} \div \frac{3}{4} = ?$$

$$\frac{1}{10} \times \frac{4}{3} = \frac{4}{30} = \frac{2}{15}$$

← giant 1
daily value

(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.



think $\frac{1}{6}$'s

$\frac{1}{3}$ is $\frac{2}{3}$ of $\frac{1}{2}$

(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)

$2\frac{1}{2}$ groups of $\frac{4}{5}$ in 2

think multiply $\frac{4}{5} \times 2\frac{1}{2}$ so $\frac{4}{5} \times \frac{5}{2} = \frac{20}{10} = 2$ yes

wholes

or think divide $2 \div \frac{4}{5}$ so $\frac{2}{1} \times \frac{5}{4} = \frac{10}{4} = 2\frac{2}{4} = 2\frac{1}{2}$ groups

wholes
size of groups