ALBERT

Name _____ Date _____

Unit Rates with Fractions Worksheet

Grade 7 · Common Core 7.RP.A.1

> Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.

Practice

Builds the skill step by step.

1. Kim walks $\frac{1}{2}$ mile in $\frac{1}{4}$ hour. What is her speed in miles per hour?

2. A recipe uses $\frac{3}{4}$ cup of sugar for 3 cups of flour. How much sugar is that per cup of flour?

3. A snail crawls $\frac{1}{3}$ foot in $\frac{1}{6}$ minute. What is its rate?

   A. 2 feet per minute

   B. $\frac{1}{2}$ foot per minute

   C. $\frac{1}{18}$ foot per minute

   D. 3 feet per minute

4. A painter covers $\frac{2}{3}$ of a wall in 2 hours. What fraction of the wall does she paint per hour?

5. A hose fills $\frac{1}{2}$ gallon in $\frac{1}{8}$ minute. How many gallons per minute is that?

6. A runner covers $\frac{3}{4}$ mile in 6 minutes. How many miles per minute is that?

7. Which expression gives the unit rate for $\frac{2}{5}$ mile in $\frac{1}{5}$ hour?

   A. $\frac{1}{5} \div \frac{2}{5}$

   B. $\frac{2}{5} \times \frac{1}{5}$

   C. $\frac{2}{5} \div \frac{1}{5}$

   D. $\frac{2}{5} - \frac{1}{5}$

8. Ava reads $\frac{1}{2}$ of a chapter in $\frac{1}{4}$ hour. How many chapters per hour is that?

9. $\frac{3}{4}$ pound of cheese costs $6. What is the price per pound?

10. A plant grows $\frac{1}{2}$ inch in $\frac{2}{3}$ week. How many inches per week is that?

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On Level

Grade-level practice.

1. A person walks $\frac{1}{2}$ mile every $\frac{1}{4}$ hour. What is the unit rate in miles per hour?

2. A machine fills $\frac{5}{6}$ of a tank in $\frac{2}{3}$ hour. How many tanks per hour is that?

3. Jo mows $\frac{3}{8}$ acre in $\frac{3}{4}$ hour. How many acres per hour does she mow?

4. Which is faster: $\frac{3}{4}$ mile in $\frac{1}{2}$ hour, or $\frac{2}{3}$ mile in $\frac{1}{3}$ hour?

   A. $\frac{3}{4}$ mile in $\frac{1}{2}$ hour, at $1\frac{1}{2}$ miles per hour

   B. They are the same speed.

   C. You cannot compare them.

   D. $\frac{2}{3}$ mile in $\frac{1}{3}$ hour, at 2 miles per hour

5. A recipe uses $\frac{2}{3}$ cup of milk for every $\frac{1}{2}$ cup of oats. How many cups of milk per cup of oats?

6. A rectangle has an area of $\frac{3}{4}$ square foot and a length of $\frac{3}{2}$ feet. What is its width?

7. Paint covers $\frac{4}{5}$ of a fence with $\frac{2}{3}$ gallon. How much of the fence does 1 gallon cover?

8. Trail mix costs \$4.50 for $\frac{3}{4}$ pound. What is the price per pound?

9. A turtle travels $\frac{1}{10}$ mile in $\frac{1}{4}$ hour. What is its speed?

   A. $\frac{1}{40}$ mile per hour

   B. $\frac{2}{5}$ mile per hour

   C. $\frac{5}{2}$ miles per hour

   D. $\frac{1}{14}$ mile per hour

10. A ribbon $\frac{7}{8}$ yard long is cut into pieces $\frac{1}{8}$ yard long. How many pieces per yard of ribbon is that?

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Challenge

Multi-step and word problems that stretch it.

1. Leo jogs $2\frac{1}{2}$ miles in $\frac{1}{3}$ hour. Mia jogs $3\frac{1}{2}$ miles in $\frac{1}{2}$ hour. Who is faster, and by how many miles per hour?

2. A printer prints $\frac{3}{4}$ of a page in $\frac{1}{12}$ minute. How many pages does it print in 5 minutes?

3. A pump empties $\frac{2}{5}$ of a pool in $\frac{3}{4}$ hour. At this rate, how long does it take to empty the whole pool?

4. Brand A: $\frac{3}{4}$ pound for \$3. Brand B: $\frac{2}{3}$ pound for \$2.80. Which is the better buy?

   A. Brand B, at \$4.20 per pound

   B. Brand A, at \$4.20 per pound

   C. Brand A, at \$4 per pound

   D. They cost the same per pound.

5. On a map, $\frac{1}{2}$ inch represents $\frac{3}{4}$ mile. How many miles does 1 inch represent?

6. A car uses $\frac{5}{8}$ gallon of gas to go $12\frac{1}{2}$ miles. How many miles per gallon does it get?

7. Sam says the rate for $\frac{1}{2}$ mile in $\frac{1}{4}$ hour is $\frac{1}{8}$ mile per hour. What mistake did he make, and what is the correct rate?

8. A baker uses $2\frac{1}{4}$ cups of flour for $1\frac{1}{2}$ batches. How much flour is needed for 4 batches?

9. A floor of $\frac{15}{2}$ square yards is tiled in $\frac{5}{6}$ hour. How many square yards per hour is that?

10. A bike rider covers $4\frac{1}{2}$ miles in $\frac{3}{8}$ hour. At this rate, how far does she ride in 1.5 hours?