Key

Math 7 - Sections 1.1-1.3
Review Problems
Station # 2
Complex Fractions and Unit Rates

Things to remember:

* Keep numbers in fraction form and show fraction computation.

* The order is important. The rate _____ per _____ means the first thing is in the numberator and the second is in the denominator.

* ALWAYS write a WORD rate first !

1) Simplify. Do not convert to decimals.

A) $\dfrac{2\frac{1}{4}}{36}$

$2\frac{1}{4} \div 36$

$\frac{9}{4} \div \frac{36}{1}$

$\frac{\cancel{9}^{1}}{4} \cdot \frac{1}{\cancel{36}_{4}}$

$\frac{1}{16}$

B) $\dfrac{\frac{1}{10}}{\frac{4}{5}}$

$\frac{1}{10} \div \frac{4}{5}$

$\frac{1}{\cancel{10}_{2}} \cdot \frac{\cancel{5}^{1}}{4}$

$\frac{1}{8}$

2) It takes Linda 20 minutes to read $8\frac{1}{3}$ pages of a book. What is her average reading rate in pages per minute?

$$\frac{\text{Pages}}{\text{min}} \qquad \frac{8\frac{1}{3}}{20} = 8\frac{1}{3} \div 20$$

$$= \frac{25}{3} \div \frac{20}{1}$$

$$= \frac{\overset{5}{\cancel{25}}}{3} \cdot \frac{1}{\underset{4}{\cancel{20}}}$$

$$= \frac{5}{12}$$

3) Write $11\frac{1}{9}$ % as a fraction in simplest form.

$$11\frac{1}{9}\% = \frac{11\frac{1}{9}}{100} = 11\frac{1}{9} \div 100$$

$$\frac{100}{9} \div \frac{100}{1}$$

$$\frac{\overset{1}{\cancel{100}}}{9} \cdot \frac{1}{\underset{1}{\cancel{100}}}$$

$$\boxed{\frac{1}{9}}$$

4) On his last math quiz, Mr. Macy answered $5\frac{2}{3}\%$ of the questions incorrectly. Write this percent as a fraction in simplest form.

$$5\tfrac{2}{3}\% = \frac{5\frac{2}{3}}{100} = 5\tfrac{2}{3} \div 100$$

$$= \frac{17}{3} \div \frac{100}{1}$$

$$= \frac{17}{3} \cdot \frac{1}{100}$$

$$= \frac{17}{300}$$

5) Mrs. Easton is making a curtain. She bought $2\frac{3}{4}$ yards of fabric. Her total cost was $11. What was the cost per yard?

$$\frac{\text{cost}}{\text{yard}} \quad \frac{11}{2\frac{3}{4}} = 11 \div 2\frac{3}{4}$$

$$= \frac{11}{1} \div \frac{11}{4}$$

$$= \frac{\cancel{11}^{1}}{1} \cdot \frac{4}{\cancel{11}_{1}}$$

$$= \$4/\text{yd}$$

6) Use a complex fraction to find out the cost per yard for fabric Jen bought $3\frac{3}{4}$ yards of fabric for $27. What was the cost per yard?

$\frac{\text{cost}}{\text{yd}}$ $\quad \frac{27}{3\frac{3}{4}} = 27 \div 3\frac{3}{4}$

$= \frac{27}{1} \div \frac{15}{4}$

$= \frac{27}{1} \cdot \frac{4}{15}$ $\quad 9 \quad 5$

$= \frac{36}{5} \Rightarrow 7\frac{1}{5}$

$7\frac{1}{5}$

$5\overline{)36}$
35
1

\$7.20 / yd

7) Use a complex fraction to help you find the following: In $1\frac{3}{4}$ hours, Sara runs $10\frac{1}{2}$ miles. Find her average rate of speed in miles per hour.

$\frac{\text{miles}}{\text{hour}}$

$$\frac{10\frac{1}{2}}{1\frac{3}{4}} = 10\frac{1}{2} \div 1\frac{3}{4}$$

$$= \frac{21}{2} \div \frac{7}{4}$$

$$= \frac{\overset{3}{\cancel{21}}}{\underset{1}{\cancel{2}}} \cdot \frac{4^{2}}{\cancel{7}_{1}}$$

$$= 6 \text{ mi/hr.}$$