CHAPTER 5 - RATIOS AND PROPORTIONS

Ratio: compares 2 numbers (fraction - leave improper)

ex: $\frac{1}{2}$, $\frac{8}{7}$, $\frac{9}{2}$

Proportions: 2 equivalent ratios (2 fractions that have the same value)

ex: $\frac{6}{8} = \frac{3}{4}$ *or* $\frac{10}{5} = \frac{2}{1}$

Complex Fraction: has at least one fraction in the numerator or denominator; (fraction in a fraction)

- To simplify complex fractions, you _____ .

(copy - switch - flip)

Examples:

$\frac{\frac{1}{4}}{\frac{17}{16}}$ $\quad \frac{1}{4} \div \frac{17}{16} \rightarrow \frac{1}{4} \cdot \frac{16}{17} = \boxed{\frac{4}{17}}$

$\frac{\frac{2}{3}}{\frac{1}{4}}$ $\quad \frac{2}{3} \div \frac{1}{4} \rightarrow \frac{2}{3} \cdot \frac{4}{1} = \boxed{\frac{8}{3}}$ * leave improper so it's a ratio

$\frac{\frac{5}{8}}{7}$ $\quad \frac{5}{8} \div \frac{7}{1} \rightarrow \frac{5}{8} \cdot \frac{1}{7} = \boxed{\frac{5}{56}}$

$\frac{\frac{6}{4}}{\frac{5}{2}}$ $\quad \frac{6}{4} \div \frac{5}{2} \rightarrow \frac{6}{4} \cdot \frac{2}{5} = \frac{6}{10} = \boxed{\frac{3}{5}}$

Chapter 5: Ratios and Proportions

Are the fractions equivalent?

1) $\frac{4}{5} \stackrel{?}{=} \frac{7}{10}$ no

2) $\frac{6}{10} \stackrel{?}{=} \frac{3}{5}$ yes

3) $\frac{1}{5} \stackrel{?}{=} \frac{6}{30}$ yes

4) $\frac{7}{2} \stackrel{?}{=} \frac{16}{6}$ no

5) $\frac{14}{12} \stackrel{?}{=} \frac{12}{10}$ no

6) $\frac{48}{9} \stackrel{?}{=} \frac{16}{3}$ yes

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Reducing Fractions (simplifying)

1) $\frac{12}{144} = \frac{1}{12}$

2) $\frac{36}{6} = 6$

3) $\frac{8}{56} = \frac{1}{7}$

4) $\frac{18}{28} = \frac{9}{14}$

5) $\frac{200}{600} = \frac{1}{3}$