

Name: \_\_\_\_\_

### Guided Notes - Proportions

✓ A \_\_\_\_\_ is an equation that states two ratios or rates are \_\_\_\_\_.

✓ Two quantities that form a proportion are \_\_\_\_\_.

For example,  $\frac{2}{5}$  and  $\frac{8}{20}$  form a proportion or are considered proportional because  $\frac{2}{5} = \frac{8}{20}$

✓ In the proportion  $\frac{a}{b} = \frac{c}{d}$  the products of  $a \cdot d$  and  $b \cdot c$  are called \_\_\_\_\_.

✓ The \_\_\_\_\_ of a proportion are \_\_\_\_\_.

For example,  $\frac{2}{5}$  and  $\frac{18}{45}$  form a proportion or are considered proportional because  $2 \cdot 45 = 5 \cdot 18$

**Practice** - determine which of the following ratios form a proportion:

	$\frac{1}{2}$ and $\frac{5}{10}$	$\frac{4}{6}$ and $\frac{18}{24}$	$\frac{10}{3}$ and $\frac{5}{6}$	$\frac{25}{20}$ and $\frac{15}{12}$
Determine by scaling				
Determine by using cross products				
Do the ratios form a proportion?	Yes / No	Yes / No	Yes / No	Yes / No

Practice – Determine whether  $x$  and  $y$  are proportional.

Birdhouses Built ( $x$ )	1	2	4	6
Nails Used ( $y$ )	12	24	48	72

Practice – Use proportions to solve the following problem.

Among American doctors, males outnumber females by a ratio of 15 to 4. If about 450,000 doctors are males, about how many are females?



Scale Method:

Cross Product Method: