# NOTES 8.1: RATIOS & PROPORTIONS WITH APPLICATIONS

Objective:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| If $\frac{a}{b}=\frac{c}{d}$, then $ad=bc$. \*Cross Multiply!!! |
| **EXAMPLE 1: Determine whether each pair of ratios forms a proportion.** |
| **a)** $\frac{4}{6}, \frac{12}{16}$  | **b)** $\frac{3}{5}, \frac{6}{10}$ |
| **EXAMPLE 2: Solve each of the following proportions.** |
| **a)** $\frac{3}{x}=\frac{5}{x+6}$ | **b)** $\frac{x-2}{2}=\frac{x+6}{4}$ |
| You can solve many problems that involve equal ratios/rates by using proportions.**EXAMPLE 3: Solve using a proportion.** |
| 1. Josefina sells helium balloons. She charges $\$9$ for $12$ balloons. At this rate, what would she charge for $50$ balloons?
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| 1. A photocopy machine copied $50$ pages in $1.5$ minutes. At this rate, how long will the machine take to copy $90$ pages?
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| 1. A recent school bond issue passed with $3$ out of every $4$ votes in favor of the bond. A total of $2550$ people voted against the bond. How many people voted in favor of the bond?
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