

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

Date: \_\_\_\_\_

## Ma8 Sec 5.8 – Solving Ratio Problems

### 1. Proportion

A proportion is a \_\_\_\_\_ that says that two ratios or two rates are equal. When we do not know one of the terms of a ratio, a \_\_\_\_\_ is often used to represent this unknown value or number.

$$\frac{40}{8} = \frac{x}{2}$$

### 2. Solving a Proportion

To solve a proportion, we can use equivalent ratios/fractions and cross multiply.

a)  $\frac{24}{x} = \frac{3}{5}$

b)  $\frac{16}{14} = \frac{9}{n}$

c)  $15:42 = 20:w$

### Practice

Identify the missing number to make an equivalent fraction.

a)  $\frac{3}{4} = \frac{n}{12}$

b)  $\frac{2}{x} = \frac{10}{15}$

c)  $\frac{x}{6} = \frac{25}{30} = \frac{y}{72}$

## Solving Problems using Proportional Reasoning

You can solve proportional reasoning problems using a proportion.

### Examples

- 1) Ms. Lo is making apple pie. The recipe calls for 500 mL of flour and 200 mL of butter. Ms. Lo only has 150 mL of butter. How much flour should she use?



- 2) In a photo of a father and his daughter, the father's height is 8 cm and the daughter's height is 6 cm. The father's actual height is 1.6 m. What is the daughter's actual height?

- 3) The ratio of people in Ms. Lo's class who have had the MMR (German measles) vaccine is 3:2. If there are 600 students at the school, how many people have had the vaccine if the ratio is proportional to the whole school?