

# Digits LESSON 5-2

11/20/2019

## Proportional Relationships $y=mx$

①

**Goal:** I will be able to **model a proportional relationship with an equation  $y=mx$ .**

**Tool Bag**  
Formulas, equations, Vocabulary, etc.

Here's How... Notes & Examples

The graph shows the distance  $d$  a train travels in time  $t$  at a constant speed of  $r$ .

Equations to represent Proportional Relationships

- Write an equation in  $d=rt$  form that models the situation shown.  $100=r \cdot 1$   
 $100=r$   
 $d=100t$
- How far will the train go after 2.5 hours?  
 $d=100(2.5)$   
 $d=250$

②

**You Try**

A machine makes 15 iPhone cases every 4 minutes. Draw a graph, write an equation, and determine the constant of proportionality to represent this situation.

$y=mx$   
 $15=m \cdot 4$   
 $\frac{15}{4} = \frac{m \cdot 4}{4}$   
 $\frac{15}{4} = m$   
 $y = \frac{15}{4}m$

③

**You Try**

A company donates money to a charity every time the hockey team scores a goal. They donate \$125 for every goal. Write an equation for the situation, where  $y$  is the total amount of money donated and  $x$  is the number of goals scored.

Donation = Rate  $\cdot$  # of goals  
 $d = 125g$

④

**We Try**

The graph shows a proportional relationship between the amount of money saved and the number of weeks. Write an equation to represent the savings ( $s$ ) over the number of weeks ( $w$ ).

$S = m \cdot w$   
 $\frac{94}{2} = \frac{m \cdot 2}{2}$   
 $47 = m$   
 $S = 47w$