1. What happens to the time as the ramp length increases? Is this an example of a direct variation or inverse variation relationship? How do you know?

inverse relationship: as one increases the other decreases

direct relationship: increase together/decrease together

Now let's look at the relationship between ramp height and time. For this investigation we will need to keep the length of the ramp consistent so that we can make sure that our changes in time are dependent only on the changes in height.

Ramp Length : _____

Ramp Height (centimeters)						
Time (seconds)						

Time in Seconds

Ramp Height in Centimeters
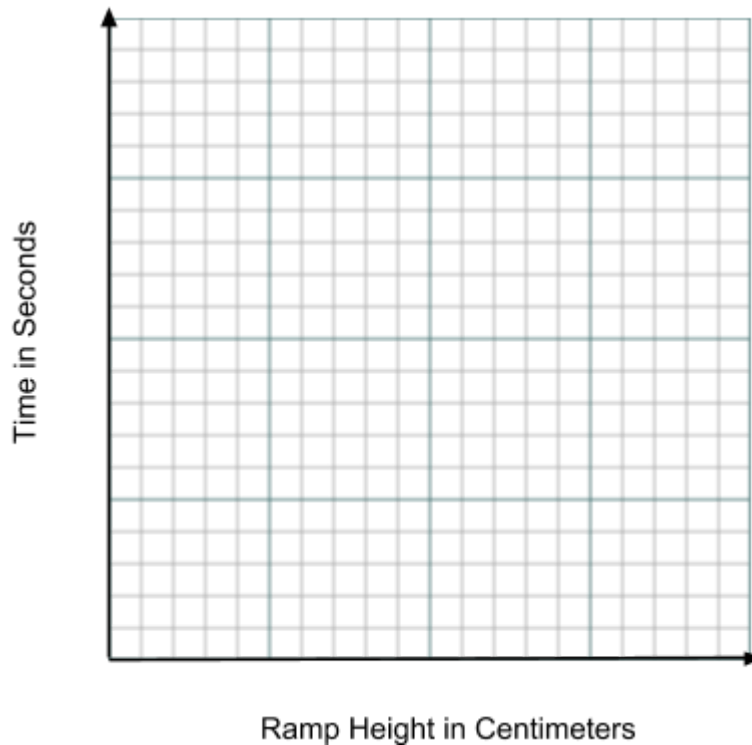
2. What happens to the time as the ramp height increases? Is this an example of a direct variation or inverse variation relationship? How do you know?

Use what you have learned about direct and inverse variation relationships to solve the following problems:

6. The time it takes to paint a house varies inversely with the number of painters. If 3 people can paint a house in 7 hours, how long will it take 5 people?

$$h = \frac{k}{p} \qquad 7 = \frac{k}{3} \qquad 21 = k$$

$$\frac{21}{5} = 4.2 \text{ hrs}$$

7. The number of gallons of fuel used on a trip varies directly with the number of miles traveled. If a trip of 270 miles requires 12 gallons of fuel, how many gallons are required for a trip of 400 miles?

$$g = km$$

$$\frac{12}{270} = \frac{270k}{270}$$

$$k = \frac{2}{45}$$

$$400 \overline{)22.5} \approx 17.78 \text{ gall}$$

$$g = 400\left(\frac{2}{45}\right)$$

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