

## STANDING HEIGHT VS KNEELING HEIGHT

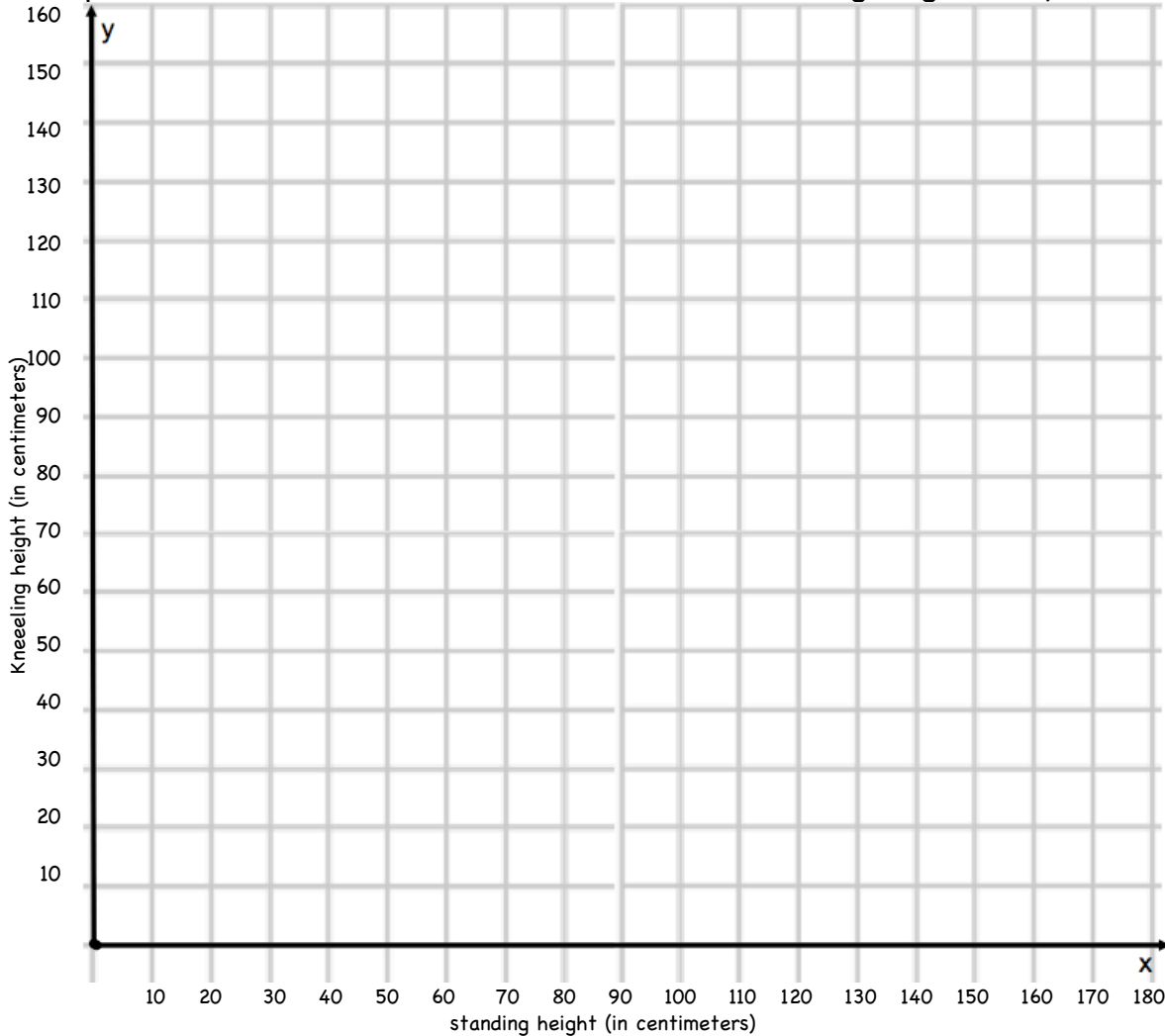
Working in groups of 4, measure each person's standing height and kneeling height to the nearest centimeter. Record your data in the table below. Record the ratio  $\frac{\text{kneeling height}}{\text{standing height}}$  as a fraction and then convert it into a decimal. When you are done

with your group, gather data from two other groups and add their information to your table.

Name	Standing height (in centimeters) x	Kneeling Height (in centimeters) y	$\frac{\text{kneeling height}}{\text{standing height}}$ (fraction)	$\frac{\text{kneeling height}}{\text{standing height}}$ (decimal)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

What do you notice about the value of the ratio in the last column under  $\frac{\text{kneeling height?}}{\text{standing height}}$  \_\_\_\_\_

Graph the results from the data, where x is the standing height and y is the kneeling height.



1. x represents \_\_\_\_\_  
y represents \_\_\_\_\_

### Direct Variation

2. Y varies directly as x means that  $y = kx$  where k is the constant of variation.

Y varies directly as x means that \_\_\_\_\_

3. Use your standing height and kneeling height to determine the constant of variation.

$$k = \frac{\text{kneeling height}}{\text{standing height}} = \frac{y}{x} =$$

4. If a student has a standing height of 150 centimeters, what is his/her kneeling height?

<http://www.freem.com/living/forums-for-mens-health/>

Leonardo da Vinci measured various distances on the human body in order to make accurate drawings. He determined that in general, the ratio of the kneeling height of a person to his or her standing height is \_\_\_\_\_.<sup>1</sup>

1. <http://faculty.laserra.edu/~wclarke/eltyalg/ch950.pdf>

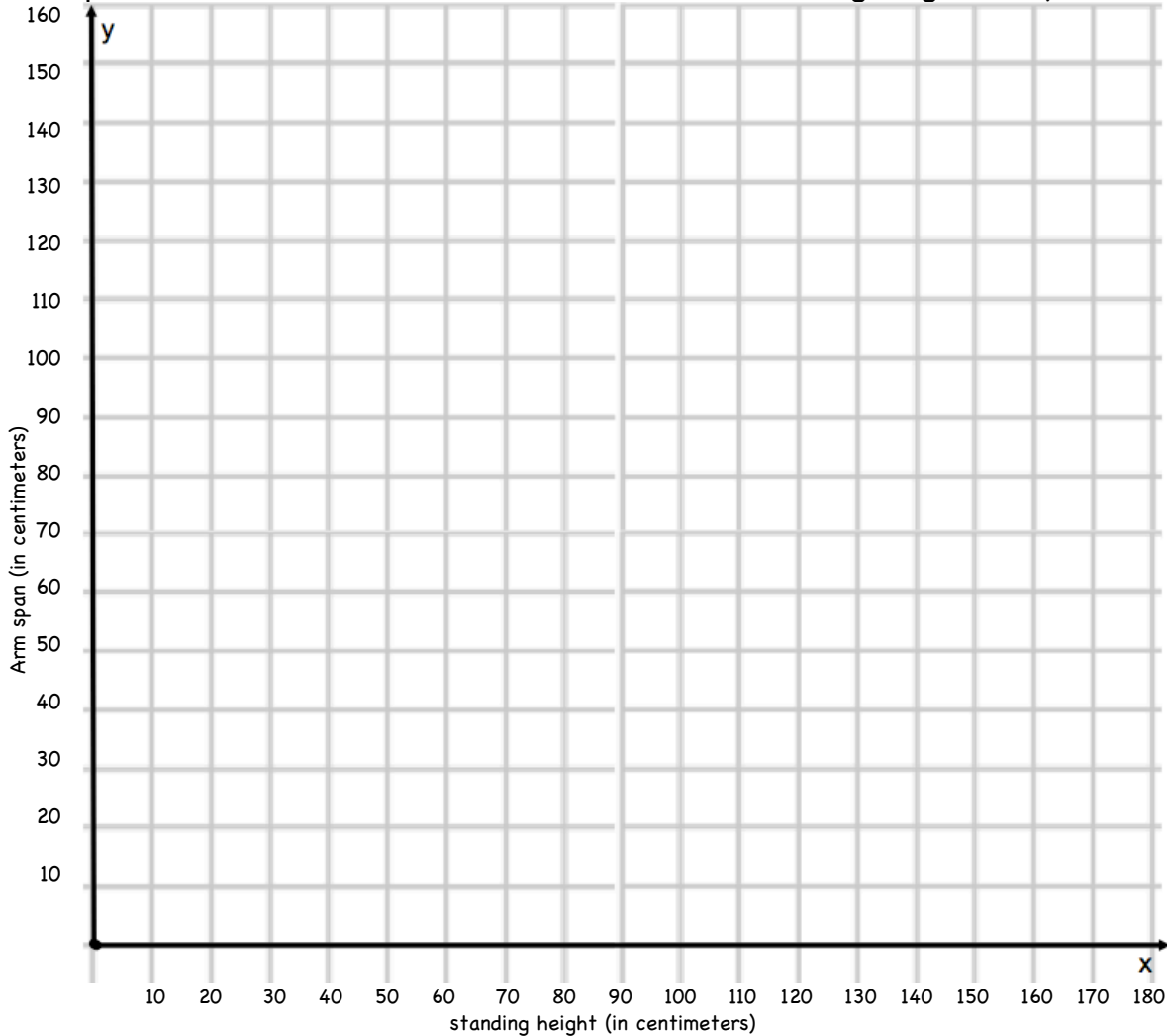
## ARM SPAN VS STANDING HEIGHT

Copy each person's standing height from "*STANDING HEIGHT VS KNEELING HEIGHT.*" Measure each person's arm span and record his or her measurement in the table below. Write the ratio of  $\frac{\text{arm span}}{\text{standing height}}$  as a fraction and then convert it into a decimal. When you are done with your group, gather data from two other groups and add their information to your table.

Name	Standing Height (in centimeters) x	Arm Span (in centimeters) y	$\frac{\text{arm span}}{\text{standing height}}$ (fraction)	$\frac{\text{arm span}}{\text{standing height}}$ (decimal)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

What do you notice about the value of the ratio in the last column under  $\frac{\text{arm span}}{\text{standing height}}$ ? \_\_\_\_\_

Graph the results from the data, where x is the standing height and y is the kneeling height.



1. x represents \_\_\_\_\_  
y represents \_\_\_\_\_

**Direct Variation**

2. Y varies directly as x means that  $y = kx$  where k is the constant of variation.

Y varies directly as x means that \_\_\_\_\_  
\_\_\_\_\_

3. Use your standing height and arm span to determine the constant of variation.

$$k = \frac{\text{arm span}}{\text{standing height}} = \frac{y}{x} =$$

4. If a student has a standing height of 150 cm, what is his/her armspan?

<http://www.freoo.com/living/forums-for-mens-health/>

Leonardo da Vinci's Vitruvian Man is based on the ideal proportions of man. He discovered that the ideal ratio of arm span to standing height is \_\_\_\_\_.

1. <http://faculty.lasierra.edu/~wclarke/eltyalg/ch950.pdf>