

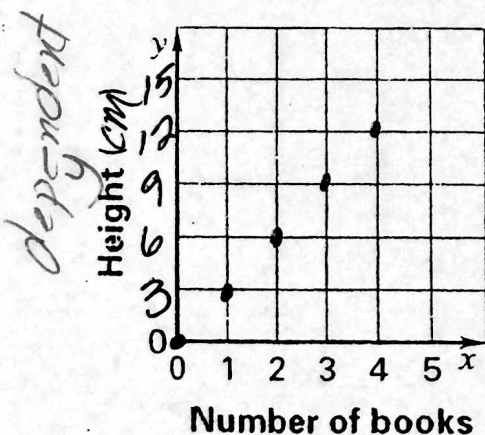
Activity Lesson Opener

For use with pages 234-239

SET UP: Work in a group.

YOU WILL NEED: • ruler • your algebra textbook

1. Measure the thickness of the spine of your algebra book. *3cm*
2. Suppose you stack one algebra book on top of another. What is the height of the stack of two books? *6cm*
3. Suppose you make a stack of three algebra books. What is the height of the stack of three books? *9cm*
4. Use the coordinate grid below. Fill in the units you used for measuring height, choose an appropriate scale, and label the y-axis. Then use your answers to Steps 1-3 to plot points to show the height y of x algebra books.



x # Books	y Height stack books
0	0
1	3cm
2	6cm
3	9cm
4	12cm
5	15cm

x - # books
independent

y - Height (cm)
stack of Books

$y = 3x$
Constant
(unit rate)

$\frac{3cm}{1 \text{ book}}$

5. Draw a line through the points. Write the equation of the line.

6. You have shown that the height (y) of a stack of algebra books varies directly with the number x of books. The model for direct variation has the form $y = kx$, where k is the constant of variation.

What is the constant of variation for this equation? What is the meaning of the constant in this equation?

Equation $y = kx$

$k = \text{constant}$

$k = 3$

so $\Rightarrow y = 3x$

Height of Books = Height of 1 Book \times number of Books
 $y = 3x$

Direct Variation Equation
Proportional Equation

Unit rate

Direct Variation

Name _____

In order for a graph to have direct variation, three things must be true.

	EXAMPLES
1. Must be _____	
2. Must go through _____	
3. Must have a k which is _____ <ul style="list-style-type: none"> • Y coordinate/ X coordinate = K • Must be the same K for each ordered pair 	

Step One- Fill in the table for the equation.

$$y = 6x$$

$$y = (6)(0)$$

$$y =$$

$$y = (6)(1)$$

$$y =$$

$$y = (6)(2)$$

$$y =$$

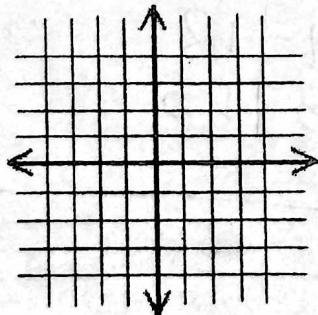
$$y = (6)(3)$$

$$y =$$

x	0	1	2	3	4
y					

Step Two- Find the constant of proportionality, which is k. ($y/x = k$)

Step Three- Graph the coordinates.



Step Four- Determine if it is direct variation.

1. Is it linear?
2. Does it (or would it) go through the origin?
3. Does it have constant of proportionality?