The point (6,11) is on the graph of
a direct variation relationship.

Write an equation for this Direct Variation.
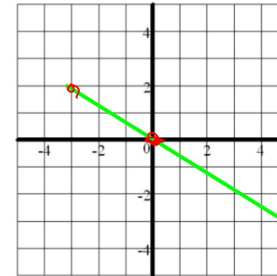
First find the variation constant: k = y/x = 11/6

Now write one of the two Direct Variation equations using this value of k:

$$y = \frac{11}{6} x \qquad OR \qquad \frac{Y}{X} = \frac{11}{6}$$
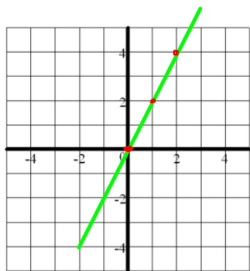

Graphing Direct Variation.

1. Graph the direct variation that contains
the point (-3,2)

Since Direct Variation must contain the
origin you put a point at the origin then
you plot the given point (-3,2) and connect
these two points to form the line.

Graphing Direct Variation.

2. Graph this direct variation: y = 2x

k = 2

the Variation Constant is
the same as the
SLOPE of the line.

Since Direct Variation must pass through the
origin you begin by plotting a point a the origin
then use the slope to find other points.

Each of the ordered pairs given are for the same
direct variation. Find the missing value.

1. (4,18) and (x, 45)

You can use a proportion:

$$\frac{18}{4} = \frac{45}{X} \qquad \boxed{X = 10}$$

2. (18,6) and (24,y)

$$\boxed{y = 8}$$

Or, find k (18/4=4.5) and write
a Direct Variation EQ: y = 4.5x

to find x replace y with 45 and solve:

$$\frac{45}{4.5} = \frac{4.5X}{4.5} \qquad \boxed{x = 10}$$

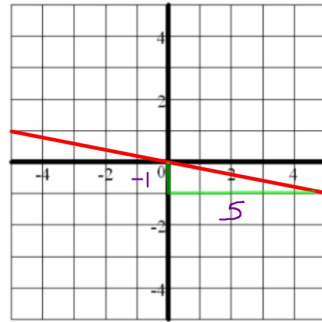## Write the equation of this Direct Variation graph.

Write one of these two equations by first finding k.

$$y = \textcircled{k}x$$

$$\frac{y}{x} = \textcircled{k}$$

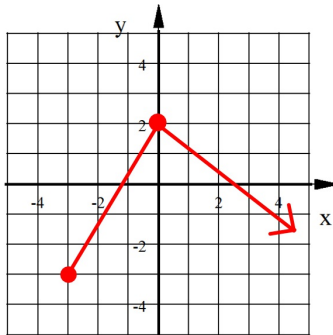k is the slope of the line.

$$y = -\tfrac{1}{5}x$$

You can now finish Hwk #22   Sec 5-5

Pages 264-265

Problems 12, 13, 23-26, 37, 41, 45

---

3. State the Domain and Range of this graph

Domain: $X \geq -3$

Graph starts at x=-3 and moves forever to the right.

Range: $y \leq 2$

Graph starts at y = 2 and moves forever down.