

What's Going On?

Checking In

How was the test?

Minds on

How Much? How Many?

Action!

Direct Variation

Consolidation

Vortex

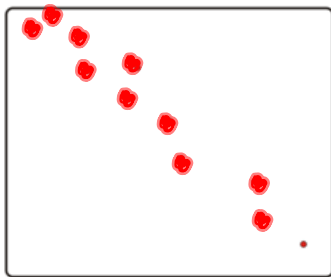
Learning Goal - I will be able to identify Direct Variation!

Linear and Non-Linear Relationships

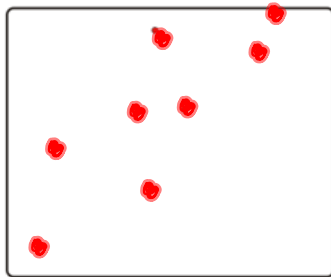
Minds on

Describing Scatter Plots and Lines of Best Fit

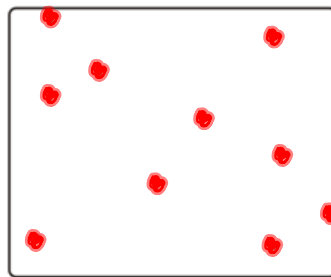
Draw a line of best fit for each of the scatter plots that show a linear relationship below. Write two or three key words to describe each relation on the line below the scatter plot. (rises upward to the right, falls downward to the right, no relationship, strong, weak, linear, non-linear)



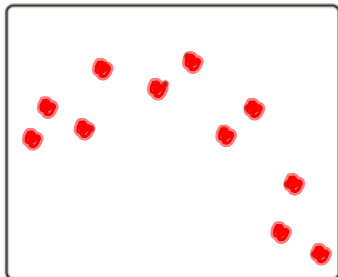
a) _____



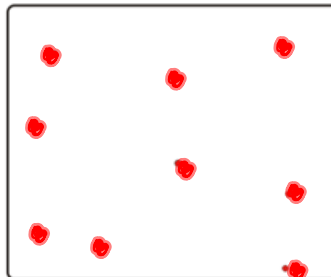
b) _____



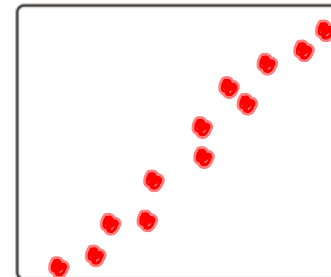
c) _____



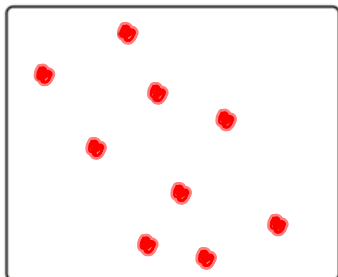
d) _____



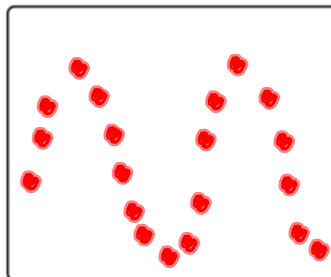
e) _____



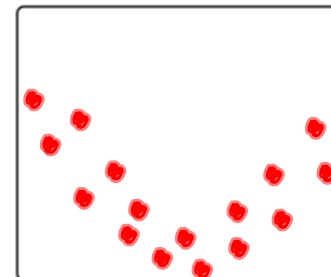
f) _____



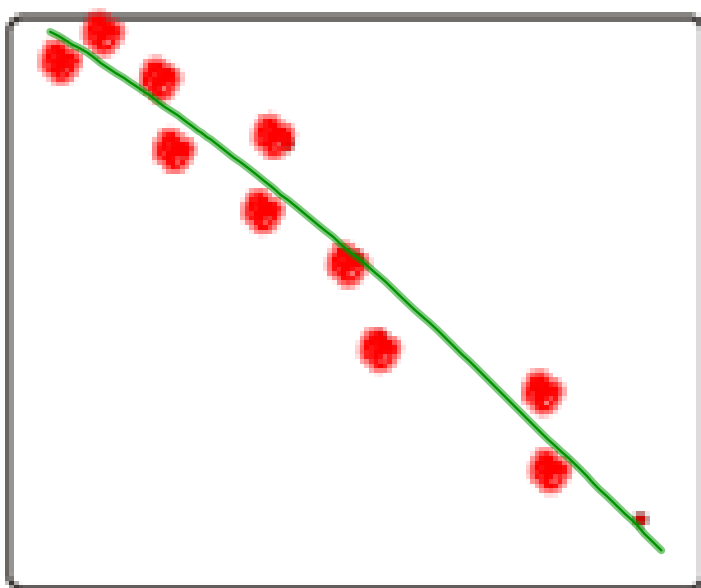
g) _____



h) _____



i) _____

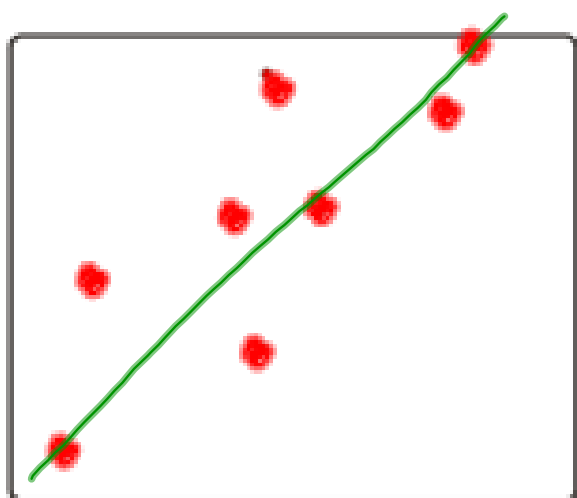


a) Negative Correlation

Linear

Non-Linear

No Relationship

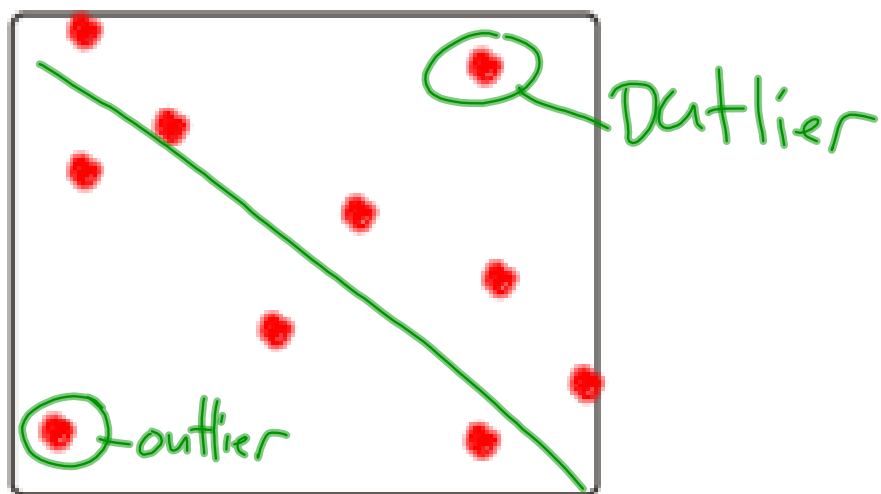


b) Positive Correlation

Linear

Non-Linear

No Relationship

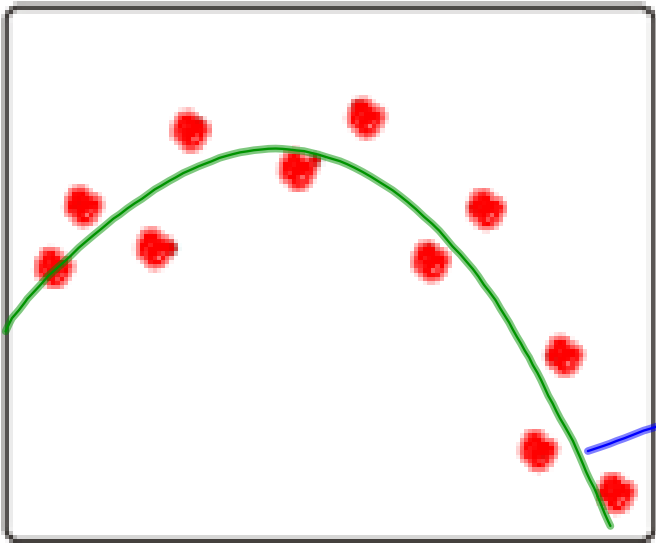


c) Negative Correlation

Linear

Non-Linear

No Relationship



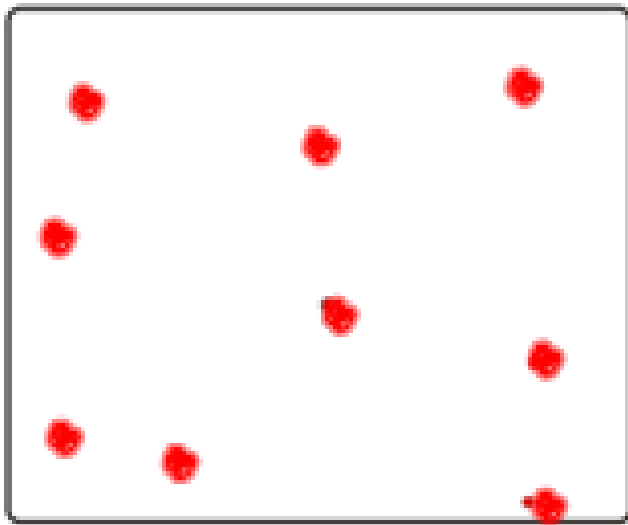
curve of best fit

d) _____

Linear

Non-Linear

No Relationship

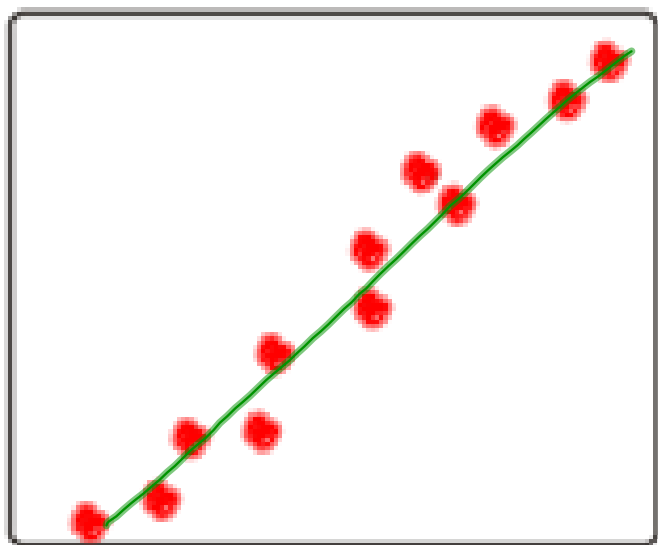


e) _____

Linear

Non-Linear

No Relationship

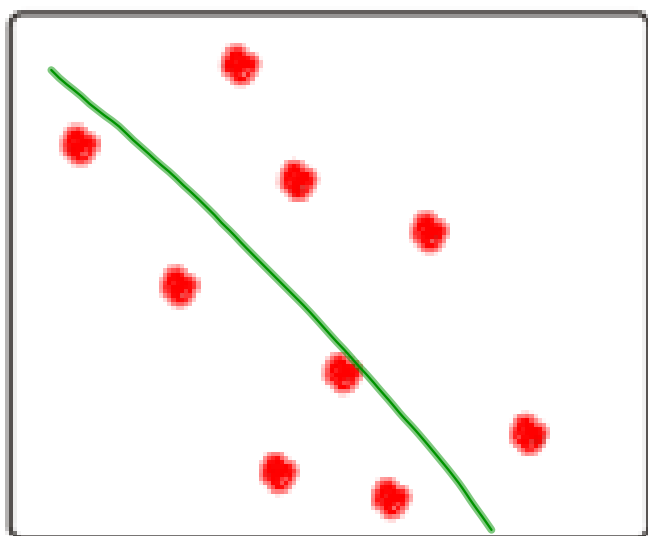


Positive Correlation

Linear

Non-Linear

No Relationship

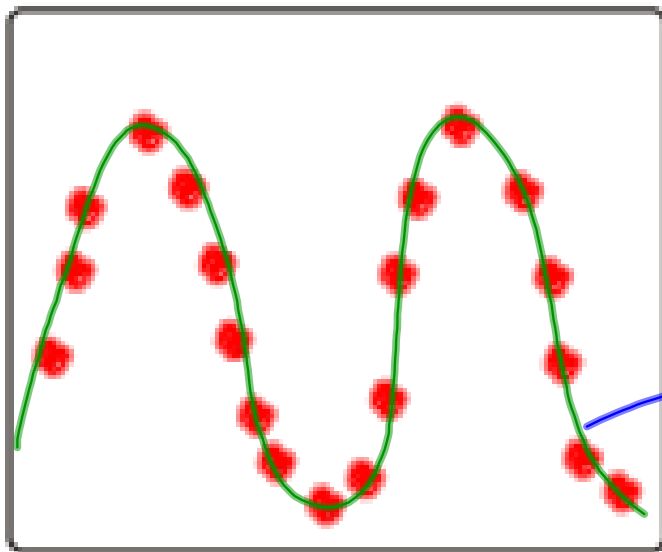


g) Negative Correlation (Weak)

Linear

Non-Linear

No Relationship



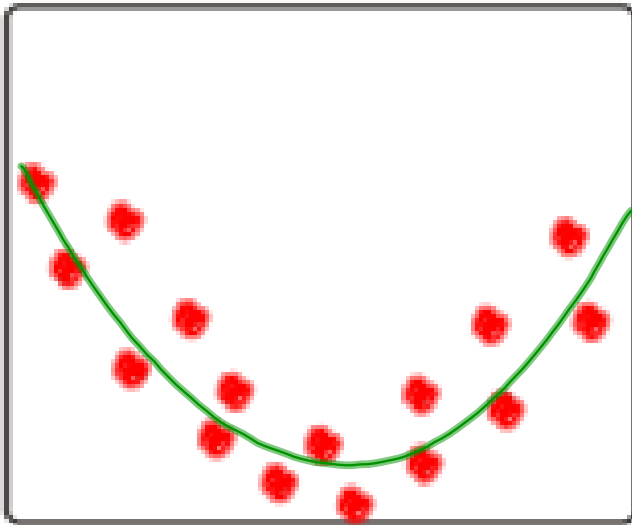
curve of best fit

h) _____

Linear

Non-Linear

No Relationship



i) _____

Linear

Non-Linear

No Relationship

Direct Variation

Minds on

How Much?

Mr. Gilbert makes \$130 an hour teaching math.

Create an expression to model Mr. Gilbert's earnings.



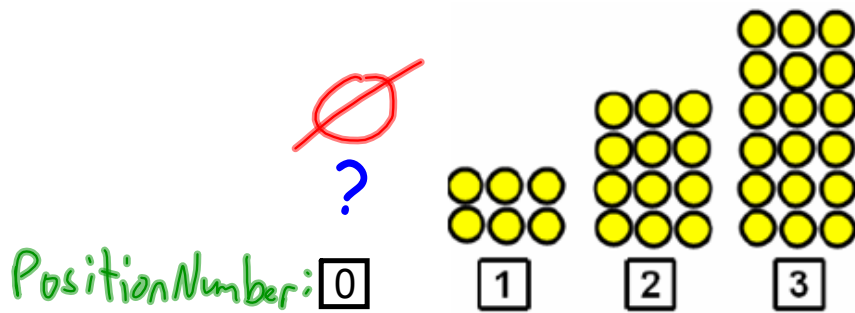
$$E = 130h$$

$E \rightarrow$ earnings

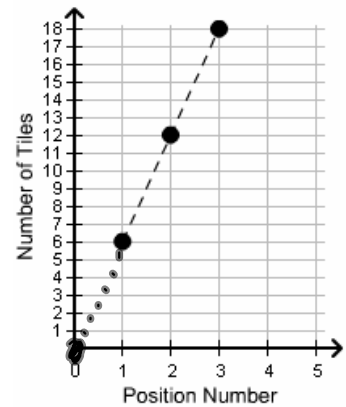
$h \rightarrow$ number of hours worked

Minds on

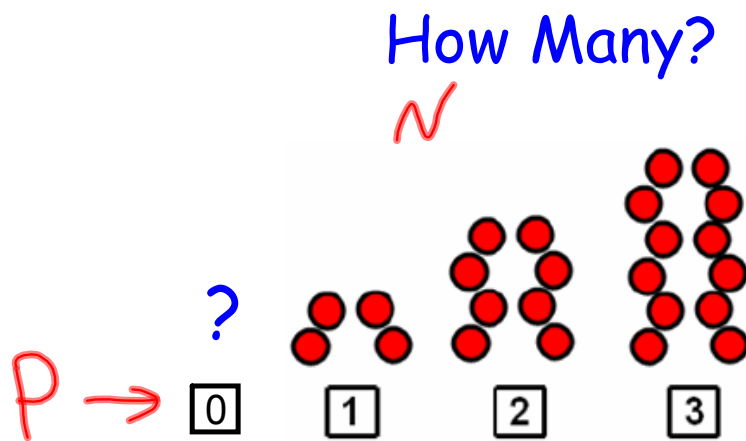
How Many?



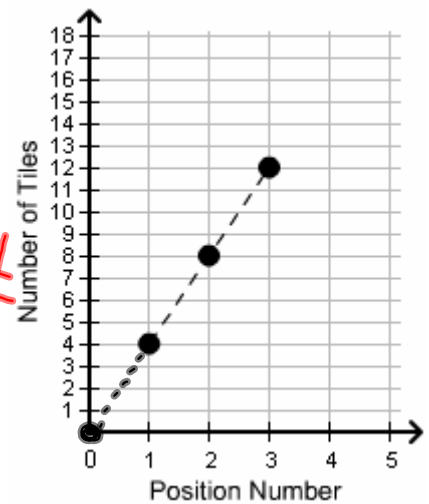
Number of Tiles = $6 \times \text{Position Number}$
 $N = 6P$



Minds on



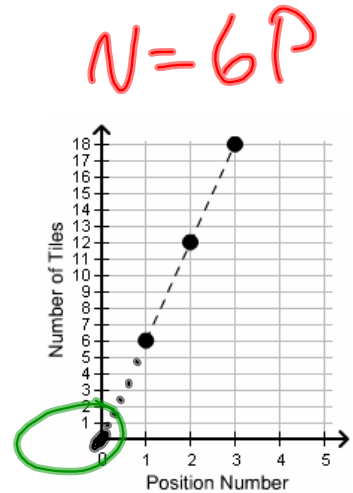
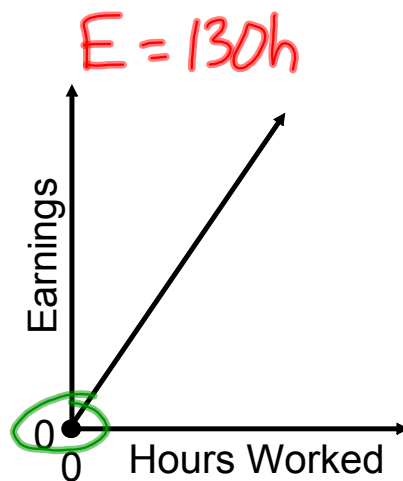
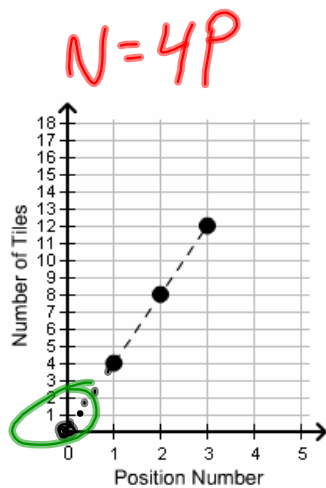
Number of Tiles = $4 \times \text{Position \#}$
 $N = 4P$



Action!

Direct Variation

These are all examples of Direct Variation



- They each go up by a constant amount (linear)
- They all have formulae
- There is nothing being added or subtracted
- They all go through the origin (0,0)

Action!

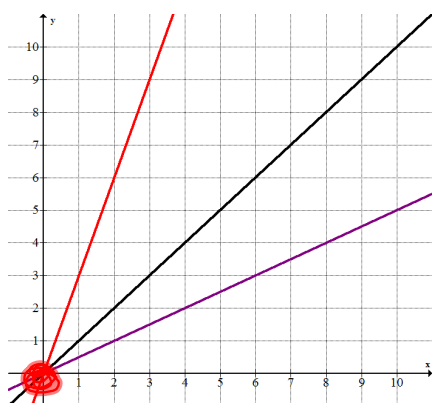
What is Direct Variation?

Direct Variation

A relationship between two variables in which one variable is a constant multiple of the other. *Nothing is added or subtracted.*

Action!

Direct Variation

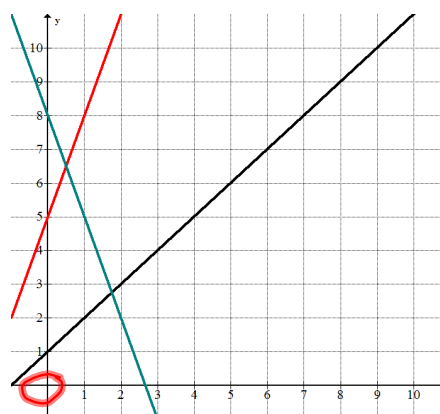


$$y = 2x$$

$$y = -3x$$

$$g = 7f$$

speed = distance/time



$$y = 2x + 5$$

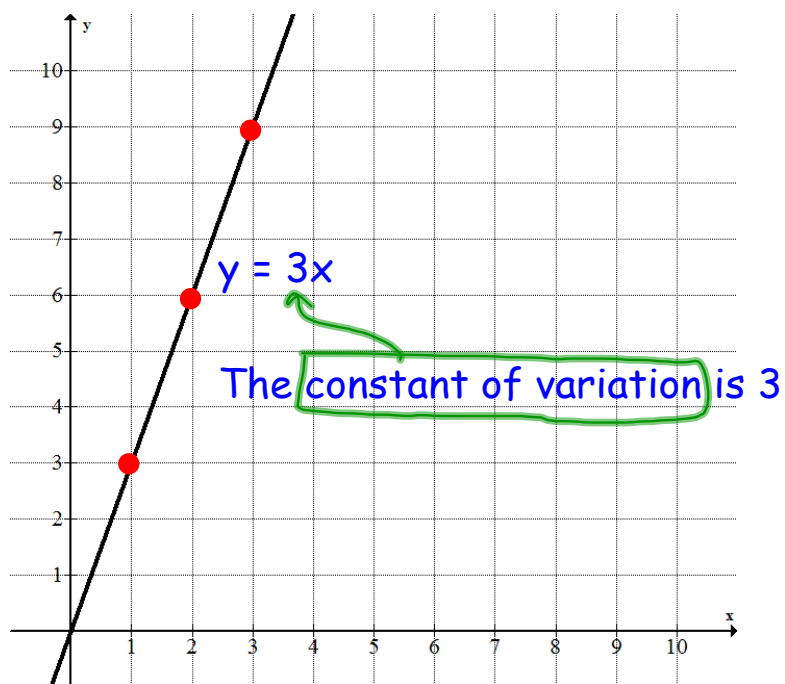
$$y = -3x - 2$$

$$a = b + 7$$

$$E = 10h + b$$

Action!

Constant of Variation



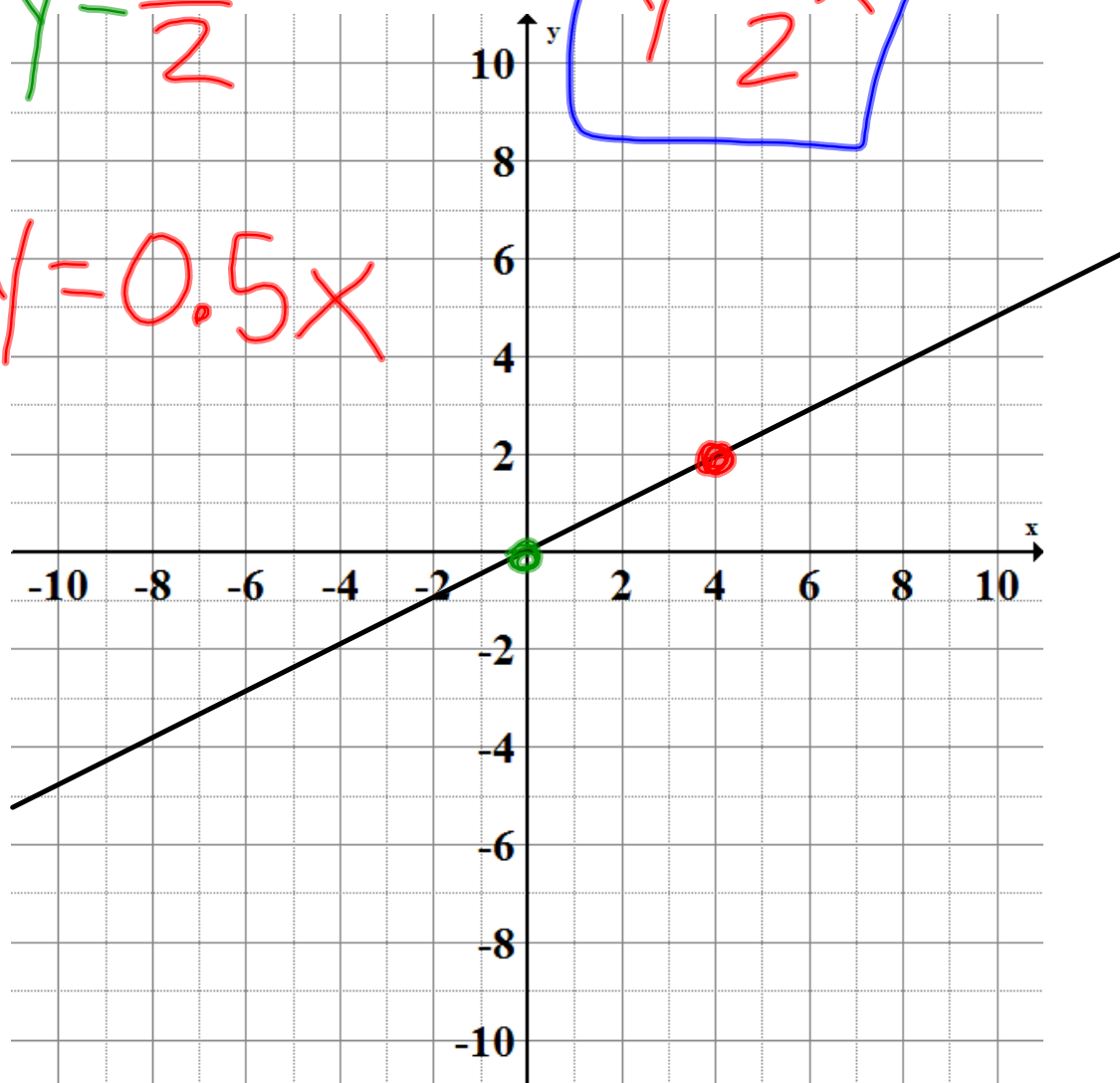
Action!

Constant of Variation

$$y = \frac{1}{2}x$$

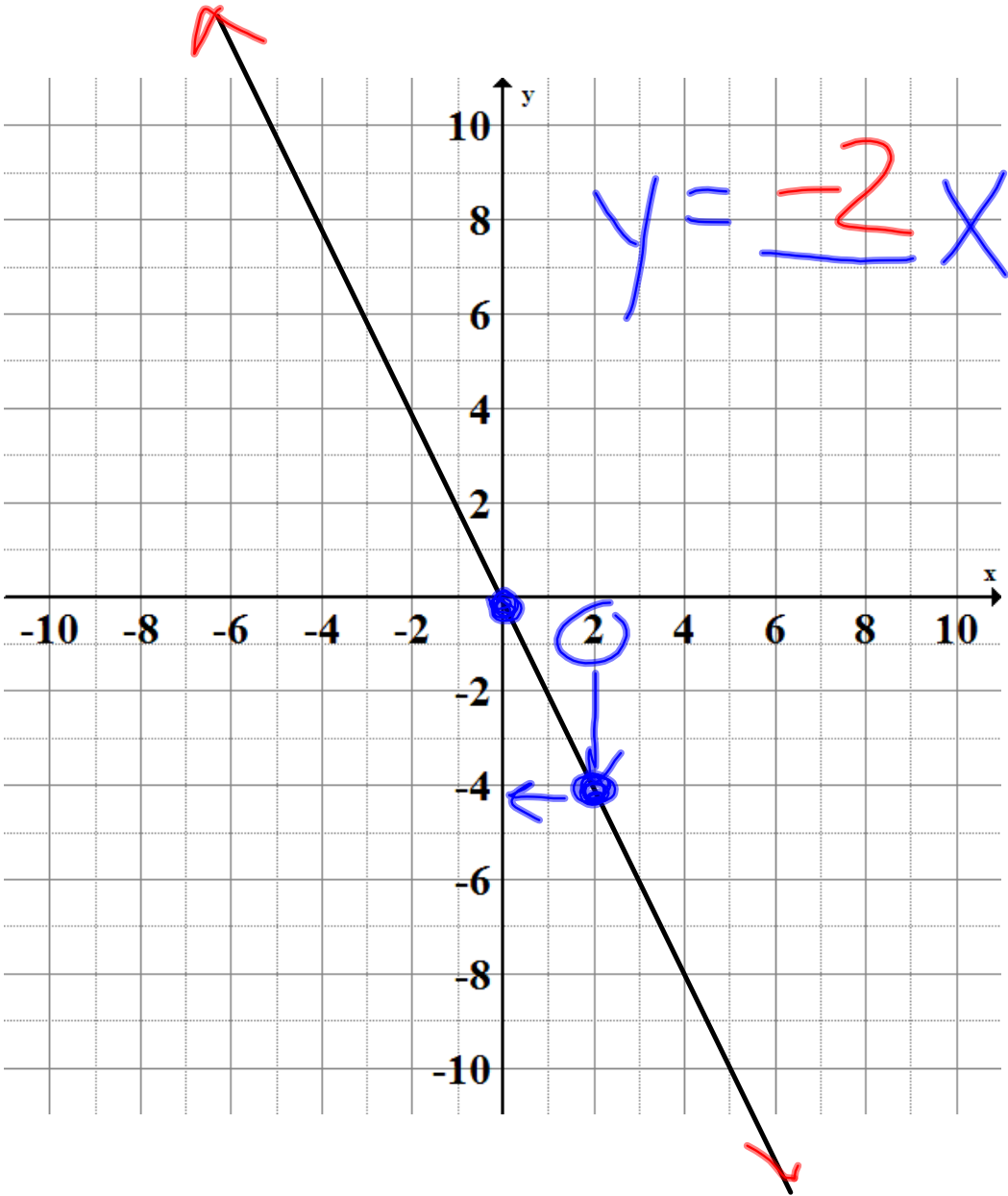
$$y = 0.5x$$

$$y = \frac{1}{2}x$$



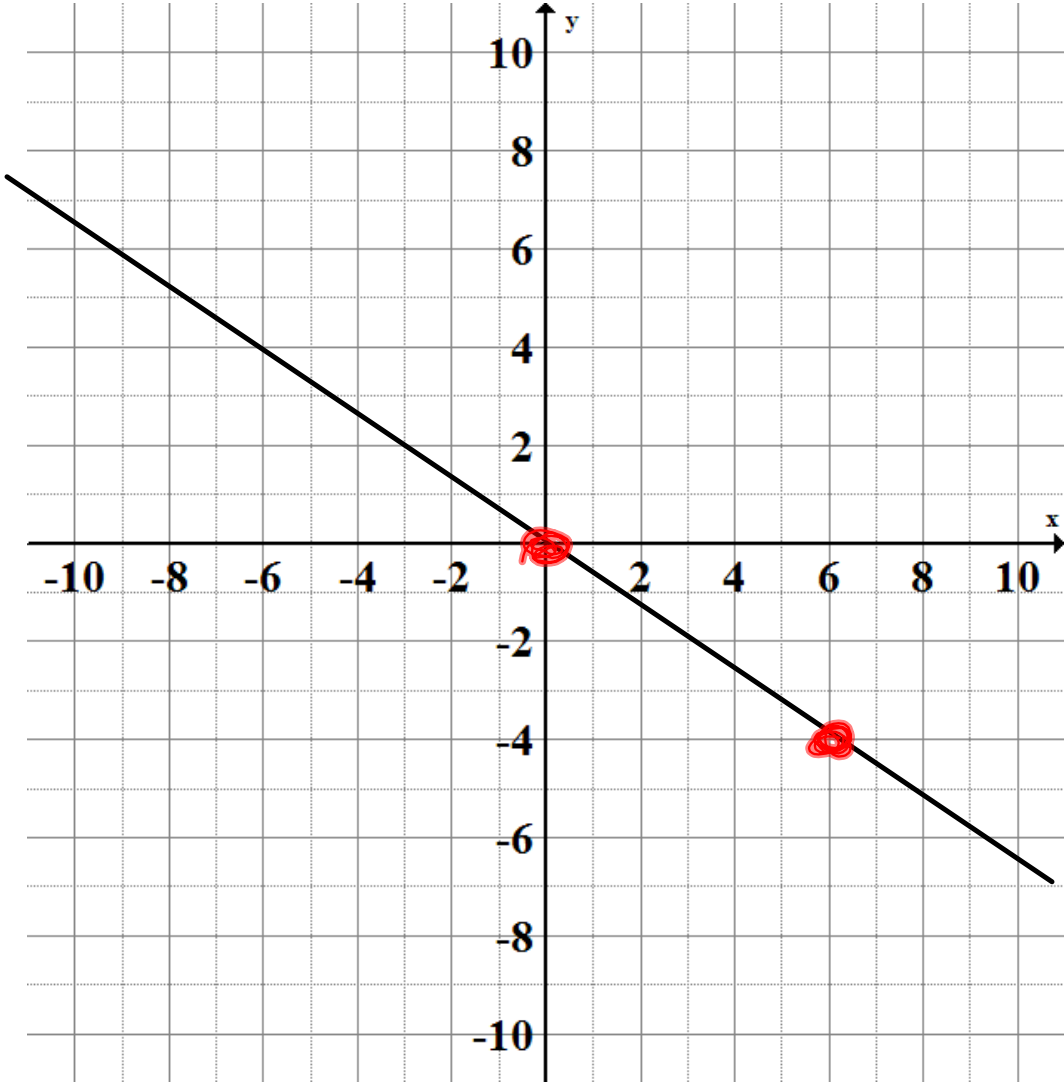
Action!

Constant of Variation



Action!

Constant of Variation



Action!

What is a Constant of Variation?

Constant of Variation

The ratio of corresponding values of the variables.

The k or coefficient in $y = kx$.

$$y = \underline{3}x \quad y = \boxed{\frac{-3}{4}}x$$

The constant that is multiplied by the independent variable.

Also known as a constant multiple.

Consolidation

Practice it!

Pg 242: 1-6, 8, 12