Linear Equations

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Grade 8
March 5, 2012

Objectives

- Find the slope of a line
- Identify the y intercept of a line
- Solve linear equations
- Graph linear equations on a coordinate plane

Brain Calisthenics – 3 minutes

Independent Variable	Dependent Variable
-9	-5
?	2
3	?
8	12
14	?
?	23
26	?

Brain Teaser

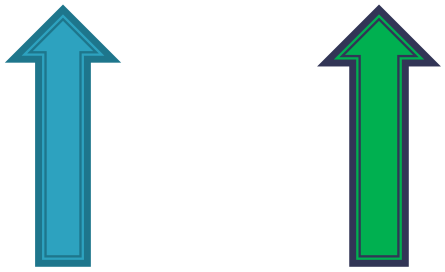
Independent Variable	Dependent Variable
-9	-5
-2	2
3	7
8	12
14	18
19	23
26	30

Recall

- Independent variable – variation does not depend on that of another
- Dependent variable – value depends on that of another
- Function – the relationship
- Functional notation (x,y)

Slope/Intercept

$$Y = MX + B$$

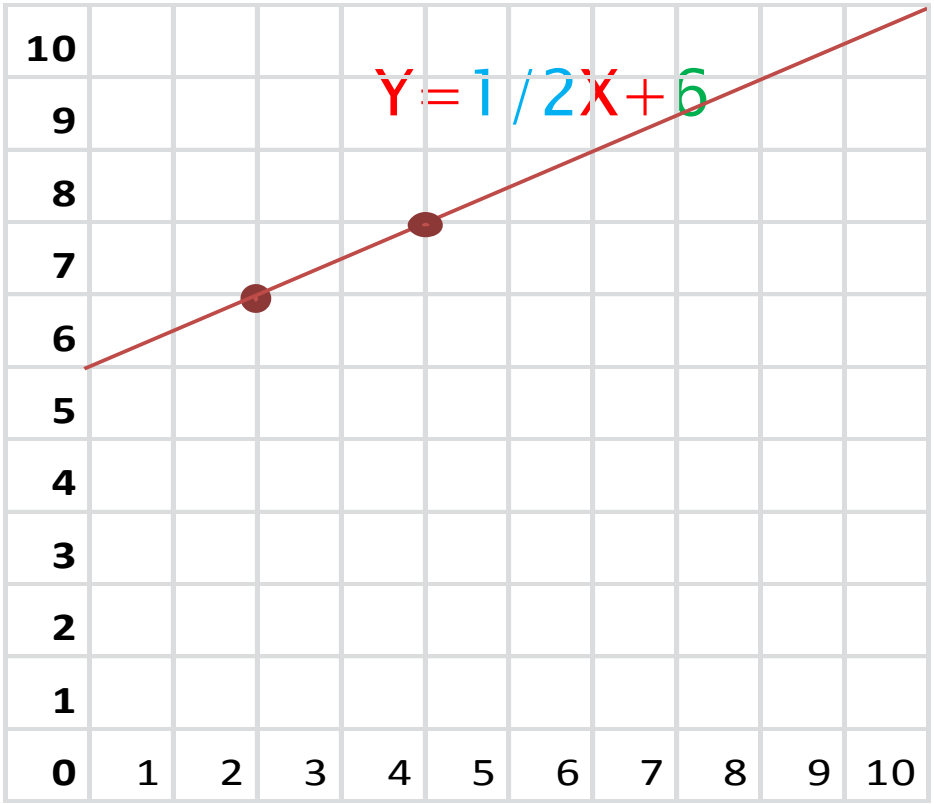


Slope

Y Intercept

Example 1

$Y=MX+B$

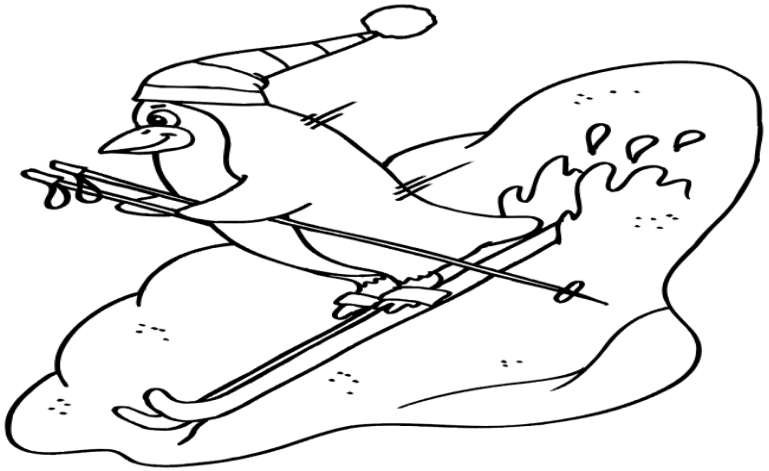


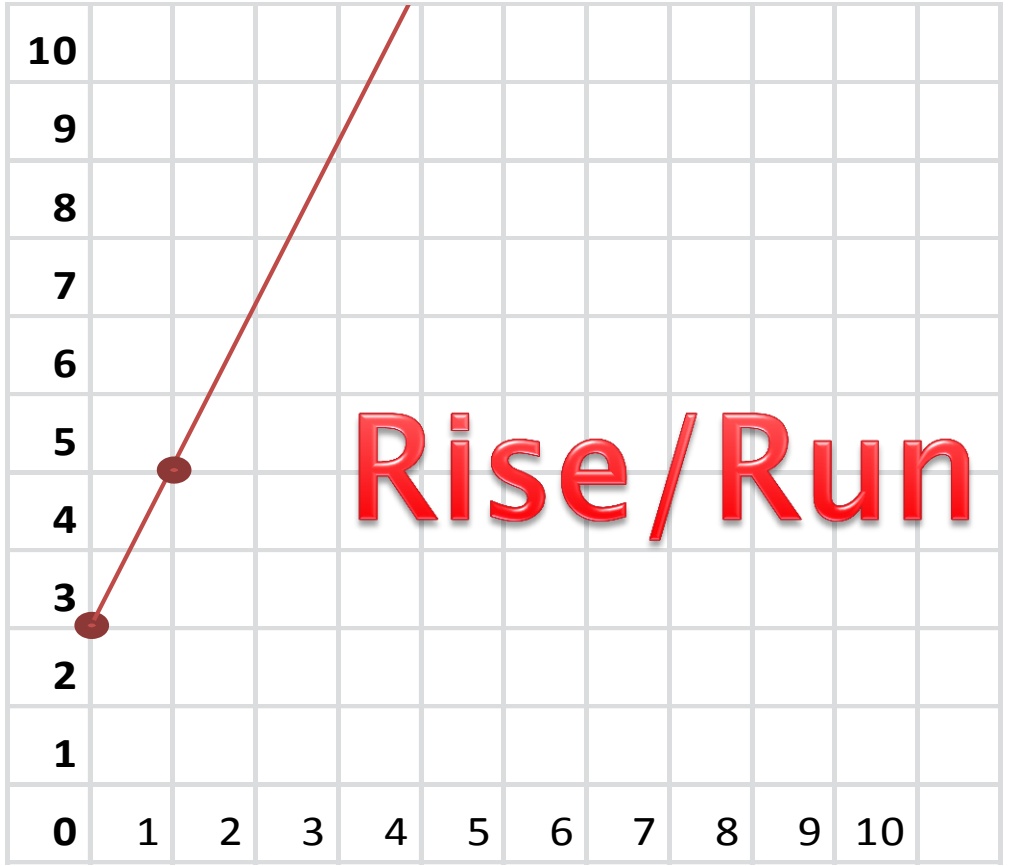
X	2	4	6
Y=1/2X+6	7	8	9

Example 2

$Y=2X+3$

$Y=2/1X+3$





Example 3

$Y=MX+B$

$6X+3Y=15$

$6x-6x+3y=15-6x$

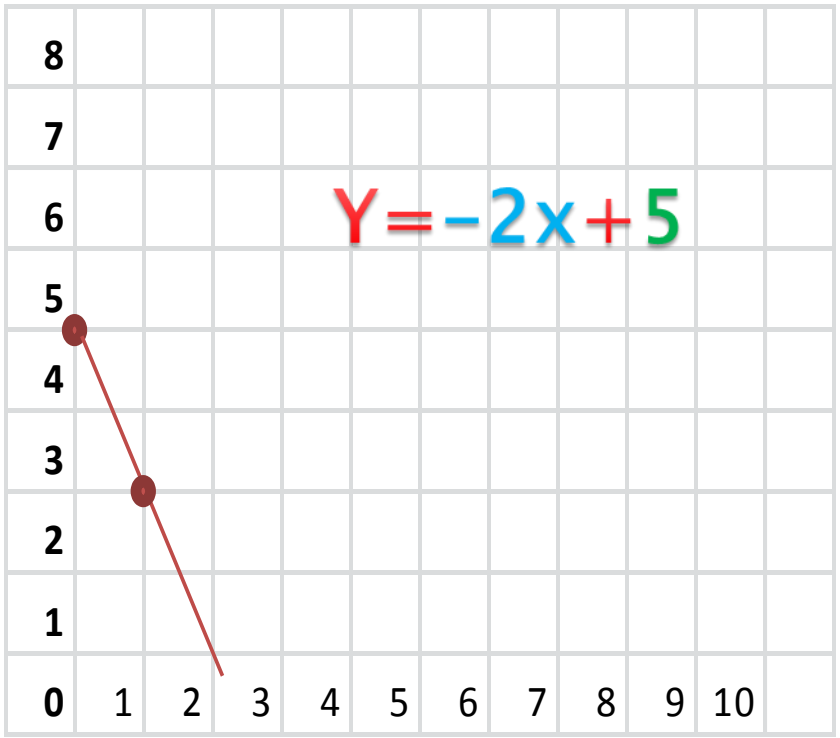
$3y/3=(15-6x)/3$

$Y=5-2x$

$Y=-2x+5$

or

$Y=-2/1x+5$



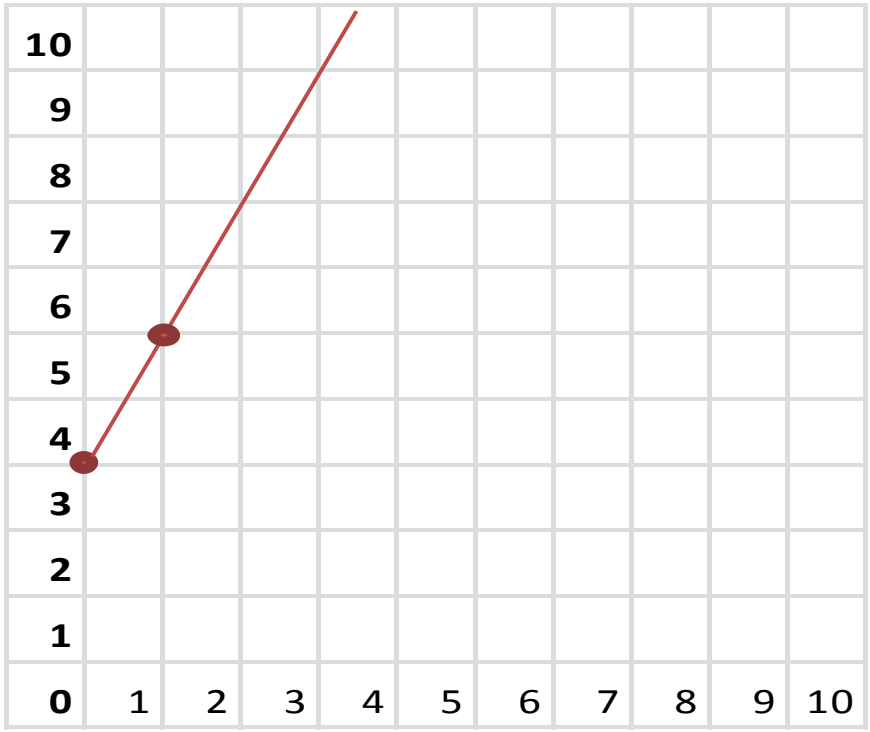
Let's see how you do…

$Y=2x+4$

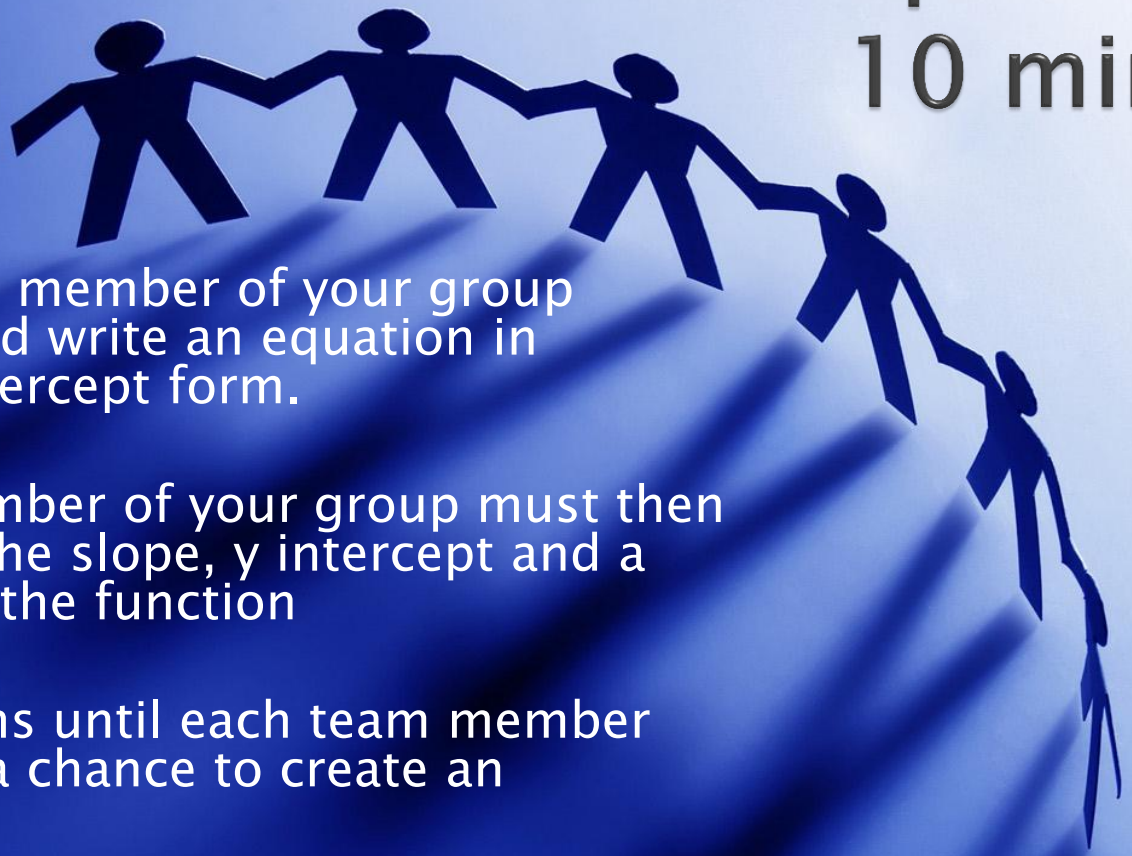
$Y=MX+B$

Slope= 2/1

Y intercept= 4



Group Exercise
10 minutes



- Have one member of your group create and write an equation in slope/intercept form.
- Each member of your group must then identify the slope, y intercept and a graph of the function
- Take turns until each team member has had a chance to create an equation
- Work Together to ensure your answer is accurate!

Solve and graph…

$$2Y-X=12$$

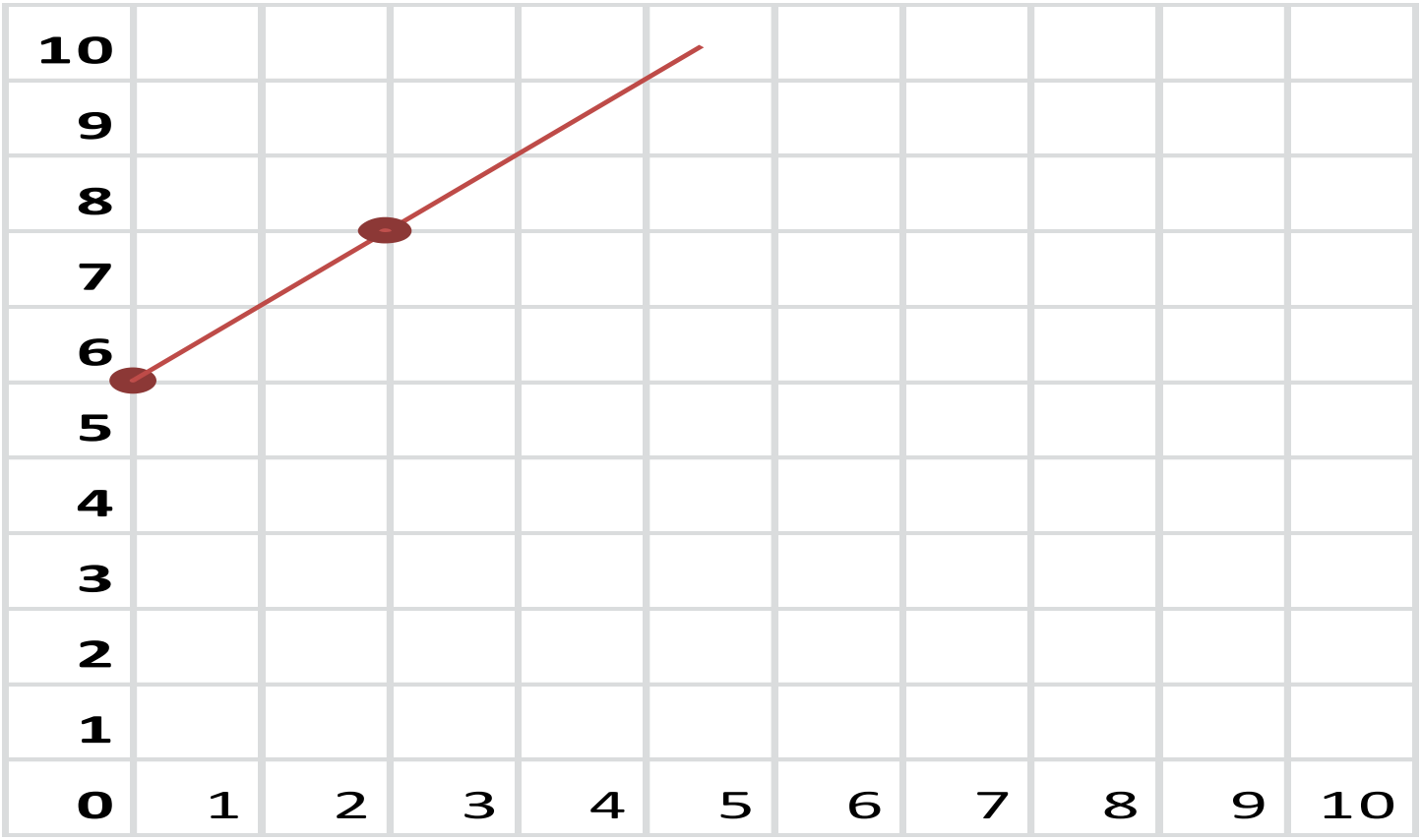
$$2y-x+x=12+x$$

$$2y/2=(12+x)/2$$

$$Y=6+1/2x$$

$$Y=1/2x+6$$

Graph it…



$Y = 1/2x + 6$

Just for fun…and learning…

- Linear Equation Rap!
- Interactive Video
- Watch for more practice

- Each independent variable corresponds to exactly one value of its dependent variable
- Slope is equal to rise/run on the coordinate plane
- You can find the slope and Y intercept of any linear equation by converting to point/slope form