

## How many solutions can a system of Linear Equations have?

1 Solution - this means - Lines Intersect

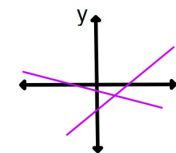
What is true about equations? Different Slopes

No Solution - this means - Lines are Parallel

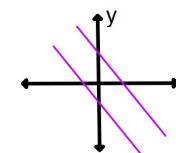
What is true about equations? Same Slopes but different y - intercepts.

Many Solutions - this means - Same Lines

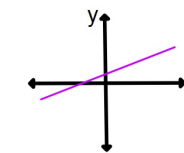
What is true about equations? Same slope and y-int.



One Solution



No Solution



Many Solutions  
same lines

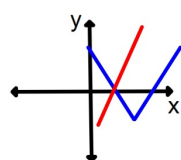
Our Textbook's  
Terms:

Independent

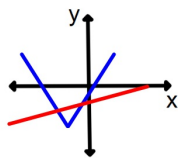
Inconsistent

Dependent

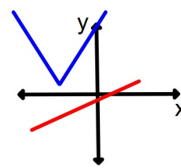
How many solutions could a system equations have if one is Linear and the other is Absolute Value?



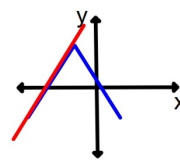
One  
Solution



Two  
Solutions

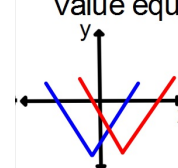


No  
Solution

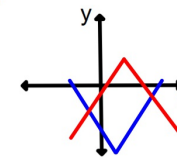


Many  
Solutions  
The linear function  
coincides with a side  
of the Absolute Value  
function

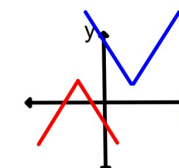
How many solutions could a system of two Absolute Value equations have?



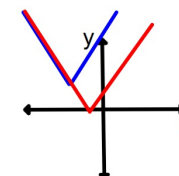
One Solution



Two Solutions



No Solution



Many Solutions  
One side of each coincides  
or they are the same function

Without graphing tell how many solutions this system of equations has?

$$y = 3x - 11 \quad m = 3 \quad b = -11$$

$$6x - 2y = 28$$

$$y = \frac{28 - 6x}{-2}$$

$$y = -14 + 3x$$

$$m = 3 \quad b = -14$$

No Solution  
the lines are parallel

Without graphing tell how many solutions this system of equations has?

$$y = -5x + 4$$

$$10x + 2y = 8$$

$$y = \frac{8 - 10x}{2}$$

$$y = 4 - 5x$$

Many solutions  
they are the same line

Without graphing tell how many solutions this system of equations has?

$$y = 4x - 9 \quad m = 4$$

$$2x + 8y = 24$$

$$y = \frac{24 - 2x}{8}$$

$$y = 3 - \frac{1}{4}x \quad m = -\frac{1}{4}$$

One Solution  
Slopes are different

How many solutions does each system of linear equations have?

1.

$$y = 2 \quad m = 0$$

$$8x - 4y = 20$$

$$-4y = -8x + 20$$

$$y = 2x - 5 \quad m = 2$$

one sol

different  
slopes

2.

$$y = 8x + 6 \quad m = 8 \quad b = 6$$

$$8x + y = 5$$

$$-8x \quad -8x \quad y = -8x + 5 \quad m = -8 \quad b = 5$$

one Sol

Different  
Slopes