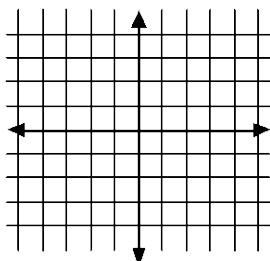
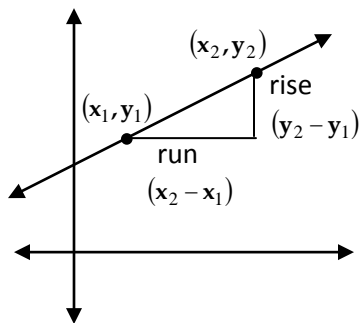


Lines in the Coordinate Plane –Focus on Slope

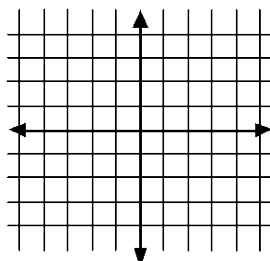
Learning Targets: Students will be able to find the slopes of lines.



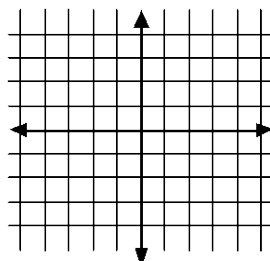
$$\text{slope (m)} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$



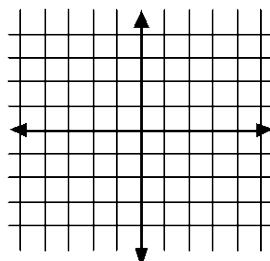
Positive slope



Negative slope



Zero Slope



No slope (undefined)

Ex. 1) Find the slope of the line that passes through the given points.

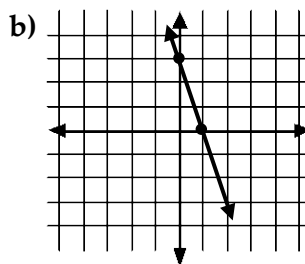
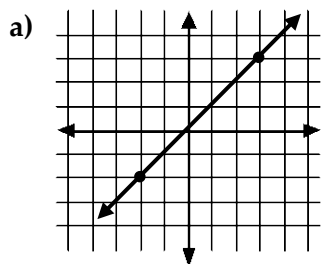
a) (4, 2) and (6, 8)

b) (-3, -1) and (-5, -11)

c) (-7, 5) and (5, 4)

* You can use the slope of two lines to tell whether the lines are parallel!!

Ex. 2) Find the slope of each line



slope-intercept form: $y = mx + b$

point-slope form: $y - y_1 = m(x - x_1)$

Ex. 3) Write an equation of a line.

a) slope = -2

y-intercept = 3

b) slope = $\frac{1}{2}$

y-intercept = -4

Ex. 4) Write an equation of the line that passes through point $(5, 6)$ and has a slope of -1 .

Ex. 5) Write an equation of a line that passes through point $(-1, 2)$ and $(-3, 6)$.

The Coordinate Plane

Learning Targets: Students will understand the theorems of coordinate geometry, including the midpoint of a line segment and the distance formula.

Simplify.

1) $\sqrt{49}$

3) $\sqrt{144}$

2) $\sqrt{225}$

4) $7\sqrt{90}$

USING THE DISTANCE FORMULA

Distance Formula

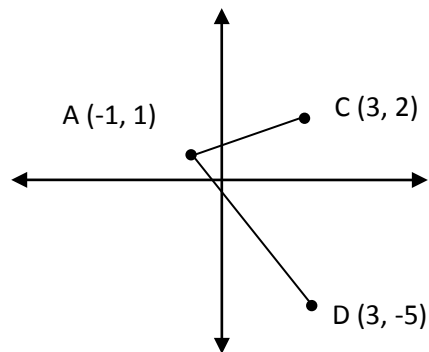
If A (x_1, y_1) and B (x_2, y_2) are points in a coordinate plane, then the distance between A & B is....

$$AB =$$

3. Find the length of the segments.

AC =

AD =



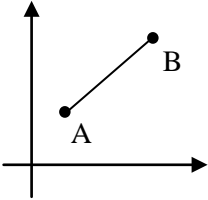
4. Find the distance between the following points.

a) (1, -2) and (5, 5)

b) (-2, -3) and (2, 4)

THE MIDPOINT FORMULA

Midpoint Formula



If A (x_1 , y_1) and B (x_2 , y_2) then

$M =$

Find the coordinates of the midpoint of \overline{AB} .

1) A(-2, 3) and B(5, -2)

2) A (2, 2) and B (6, 2)

3) The midpoint of \overline{JK} is M(1, 4). One endpoint is J(-3, 2). Find the coordinates of the other endpoint.