SLIDE 1:

Slope-Intercept Form:

$$y = mx + b$$
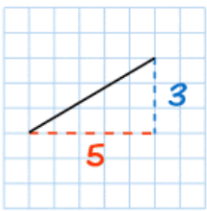
Slope — m

y-intercept — b

Slope Formula:

$$\frac{Rise}{Run}$$

Example:

$$\frac{3\uparrow}{4\rightarrow}$$

SLIDE 2:

Slope- how steep a straight line is.

3

5

Slope Formula:

$$\frac{Rise}{Run}$$ Always a fraction since rise/run

Example:

$$\frac{3\uparrow}{5\rightarrow}$$

SLIDE 3:

Slope Formula:

$$\frac{Rise}{Run}$$

Slope Formula:

$$\frac{Rise\ (change\ in\ y)}{Run\ (change\ in\ x)}$$

Slope Formula:

$$\frac{y_2 - y_1}{x_2 - x_1}$$

Example:

(3, 2) & (5,4)

(x_1, y_1) (x_2, y_2)

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 2}{5 - 3} = \frac{2}{2} = 1$$

SLIDE 4:

Find the Slope of the line that passes through each pair of points.

Example 2: (7, -4) & (4,8)

Your Turn #1: (1, 2) & (3,5)

Your Turn #2: (5, 9) & (3,9)

SLIDE 5:

Y-Intercept- the coordinate point where a straight line crosses the Y axis of a graph. ALWAYS IN THE FORM (0,#).

Y Intercept

y-int: (0,1)

SLIDE 6:

Writing Equations of line with given slope and y-intercept

Example 1: slope: ¼, y-intercept: 5

Slope-Intercept Form:

$$y = mx + b$$ answer: y = ¼x + 5

Your Turn #1: slope: -½ , y-intercept: 6
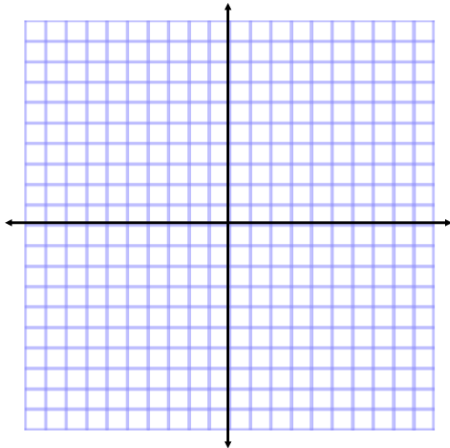
Your Turn #2: slope: ¾ , y-intercept: -7

SLIDE 7:
Graphing Linear Equations
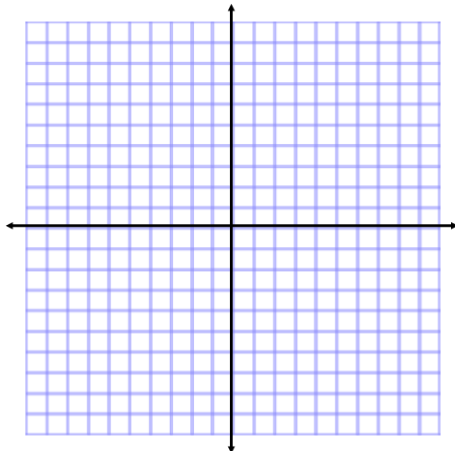Example 1:

y = ½x + 3

slope =
y-int. =

SLIDE 8:
Graphing Linear Equations
Example 2:

y = -4/3x + 1

slope =
y-int. =

SLIDE 9:

Write an equation of the line that passes through each point with the given slope.

Example 1:
Slope = 3/4; passes through (0,2)

y = mx + b

Slope   y-intercept

y = (3/4)x + b

since we know x and y from our point we can put it in and solve for the y-intercept, b.

y = (3/4)x + b
2 = (3/4)(0) + b
2 = (0) + b
2 = b
so...
y = (3/4)x + 2

SLIDE 10:

Write an equation of the line that passes through each point with the given slope.

Example 2:
Slope = -1/2; passes through (6,4)

y = mx + b

Slope   y-intercept

y = (-1/2)x + b

since we know x and y from our point we can put it in and solve for the y-intercept, b.

y = (-1/2)x + b

SLIDE 11:

Write an equation of the line that passes through each point with the given slope.

Your Turn #1:
Slope = 2; passes through (4,12)

y = mx + b

Slope   y-intercept

y = 2x + b

since we know x and y from our point we can put it in and solve for the y-intercept, b.

y = 2x + b