

Algebra I

Notes Section 3.5

Graph Using Slope-Intercept Form

Big Ideas

1. How to write an equation in slope-intercept form.
2. How to identify the slope and y-intercept from the equation and graph.
3. How to graph an equation using the slope and y-intercept.

VOCABULARY

Slope-Intercept Form: _____

EXAMPLE 1 Identify the slope and y-intercept of the line with the given equation.

a) $y = 3x + 4$

b) $3x + y = 2$

c) $x + 4y = 6$

d) $3x - 3y = 12$

$m =$ _____

$m =$ _____

$m =$ _____

$m =$ _____

$b =$ _____

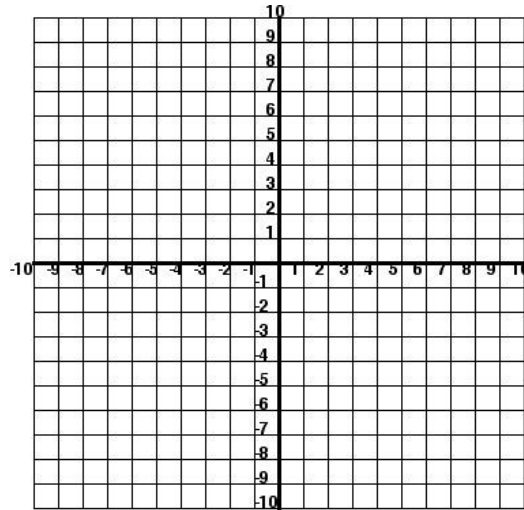
$b =$ _____

$b =$ _____

$b =$ _____

EXAMPLE 2 Graph the equation.

a) $2x + y = 3$



b) $x + 2y = 4$

m = _____

m = _____

b = _____

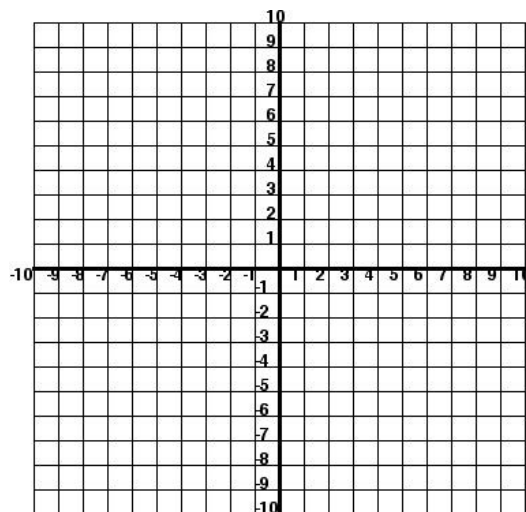
b = _____

EXAMPLE 3

To get from one floor to another at a library, you can take either the stairs or the escalator. You can climb stairs at a rate of 1.75 feet per second, and the escalator rises at a rate of 2 feet per second. You have to travel a vertical distance of 28 feet. The equations model the vertical distance d (in feet) you have left to travel after t seconds.

a) Graph

Stairs: $d = -1.75t + 28$

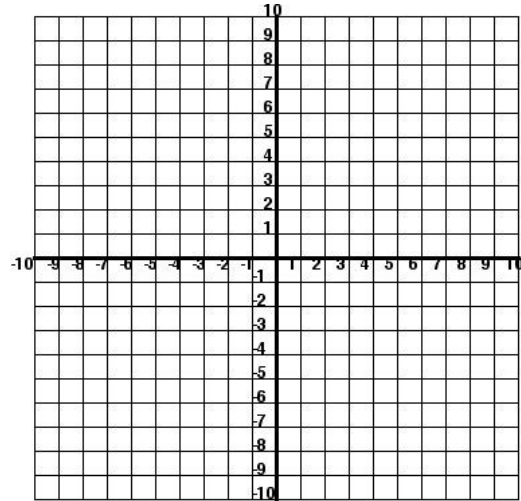


Escalator: $d = -2t + 28$

b) How much time do you save by using the escalator?

EXAMPLE 4 A company produced two 30 second commercials, one for \$300,000 and the second for \$400,000. Each airing of either commercial on a particular station costs \$150,000. The cost C (in thousands of \$) to produce the 1st commercial and air it n times is given by $C=150n + 300$. The cost to produce the second and air it n times is given by $C=150n + 400$.

a) Graph both equations.



b) What is the difference of the costs to produce each commercial and air it 2 times? 4 times? What do you notice about the differences?

EXAMPLE 5 Determine which lines are parallel?

Line a: $m =$ _____

Line b: $m =$ _____

Line c: $m =$ _____

