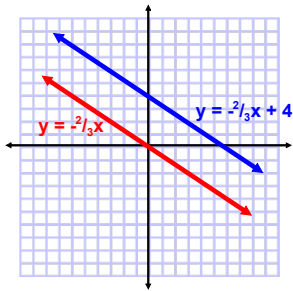


4.5 Parallel and Perpendicular Lines

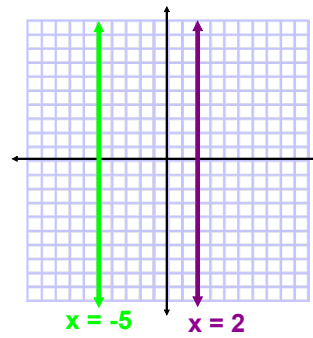
Two different lines are **parallel** if they do not intersect.

Two lines are **parallel** if they have the **same slope** and **different y-intercepts**



Oct 6-5:01 AM

Any two **vertical lines** are **parallel**.



Oct 14-12:40 PM

Write in slope-intercept form the equation of the line that is **parallel** to the line $y = 2x - 3$ and passes through the point $(3, -1)$.

Hint: $y - y_1 = m(x - x_1)$

$m = 2$ $(3, -1)$

$y + 1 = 2(x - 3)$

$y + 1 = 2x - 6$

$y = 2x - 7$

Nov 20-10:04 AM

A line passes through $(12, 5)$ and is **parallel** to the graph of $3y = 2x - 3$. Write the equation of the line in slope-intercept form?

$3y = 2x - 3$

$m = \frac{2}{3}$ $(12, 5)$

$y = \frac{2}{3}x - 1$

$y - 5 = \frac{2}{3}(x - 12)$

$y - 5 = \frac{2}{3}x - 8$

$y = \frac{2}{3}x - 3$

Oct 7-6:55 PM

A line passes through $(-3, -1)$ and is **parallel** to the graph of $y = 3$. Write an equation of the line in slope-intercept form?

$y = -1$

$y = 0x + 3$

$m = 0$ $(-3, -1)$

$y + 1 = 0(x + 3)$

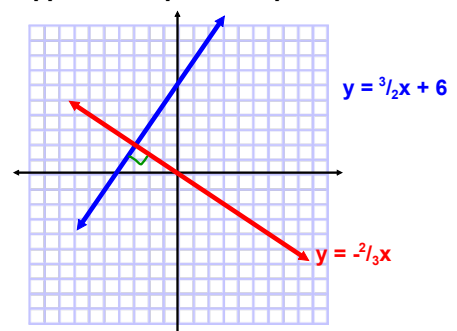
$y + 1 = 0$

$y = -1$

Oct 14-12:42 PM

Two different lines are **perpendicular** if they intersect at a right angle.

Any **two lines** are **perpendicular** if they have the **opposite reciprocal slopes**



Oct 6-5:05 AM

Are the graphs of $4y = -5x + 12$ and $5y = 4x - 30$ parallel, perpendicular, or neither? Explain.

$$4y = -5x + 12$$

$$y = -\frac{5}{4}x + 3$$

$$m = -\frac{5}{4}$$

$$5y = 4x - 30$$

$$y = \frac{4}{5}x - 6$$

$$m = \frac{4}{5}$$

perpendicular

Oct 7-6:55 PM

Are the graphs parallel, perpendicular, or neither? Explain.

$$4y = 3x + 28 \quad \text{and} \quad 4x - 3y = 9$$

$$y = \frac{3}{4}x + 7$$

$$m = \frac{3}{4}$$

neither

$$-3y = -4x + 9$$

$$y = \frac{4}{3}x - 3$$

$$m = \frac{4}{3}$$

Oct 14-1:04 PM

Are the graphs parallel, perpendicular, or neither? Explain.

$$6y = -x + 6 \quad \text{and} \quad x + 6y = -6$$

$$y = -\frac{1}{6}x + 1$$

$$m = -\frac{1}{6}$$

parallel

$$6y = -x - 6$$

$$y = -\frac{1}{6}x - 1$$

$$m = -\frac{1}{6}$$

Mar 8-10:09 AM

Write in slope-intercept form the equation of the line that is **perpendicular** to the line $y = -\frac{3}{4}x - 2$ and passes through the point $(3, -4)$.

$$\perp m = \frac{1}{3} \quad (3, -4)$$

$$y + 4 = \frac{1}{3}(x - 3)$$

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

$$y = \frac{1}{3}x - 5$$

Nov 20-10:04 AM

Write the equation of a line that is **perpendicular** to $y = -x + 4$, and passes through the point $(4, -1)$.

$$m = \frac{1}{1}$$

$$\perp m = \frac{1}{1} = 1 \quad (4, -1)$$

$$y + 1 = 1(x - 4)$$

$$y + 1 = x - 4$$

$$y = x - 5$$

Oct 14-1:00 PM

Classwork: p.261 #2 - 28 even

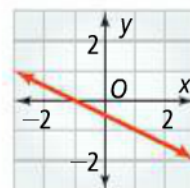
Show work!

Final Five

Which equation represents the graph of a line parallel to the line at the right?

(A) $y = \frac{1}{2}x + 5$

(B) $y = 2x - 6$



(C) $y = -2x + 4$

(D) $y = -\frac{1}{2}x - 2$

Mar 5-9:20 AM