

Slope Criterion for Parallel Lines

Two non-vertical lines are parallel if and only if they have
_____.

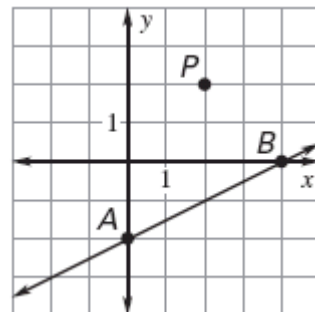
Vertical lines are _____.

Example 1: Write equations of parallel lines.

a) Write an equation of the line passing through the point (3, 4) that is parallel to the line with equation $y = -4x + 5$.

b) Write the equation of the line that passes through (3, 5) and is parallel to the line that passes through (3, 3) and (-3, -1)

c) Graph the line parallel to line AB that passes through point P and write its equation.



Slope Criterion for Perpendicular Lines

Two non-vertical lines are perpendicular if and only if

_____.

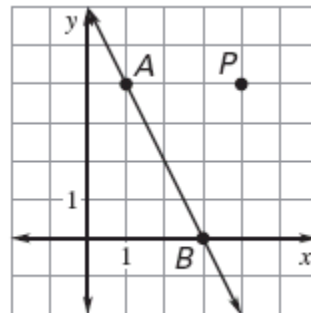
Vertical lines and horizontal lines are _____.

Example 2: Write equations of perpendicular lines.

a) Write an equation of the line passing through the point $(6, -3)$ that is perpendicular to the line with equation $y = 4x - 7$.

b) Write the equation of the line that passes through $(-2, 3)$ and is perpendicular to the line that passes through $(0, 1)$ and $(-3, -1)$

c) Graph the line perpendicular to line AB that passes through point P and write its equation.



Equations of Lines

Slope-intercept form: _____

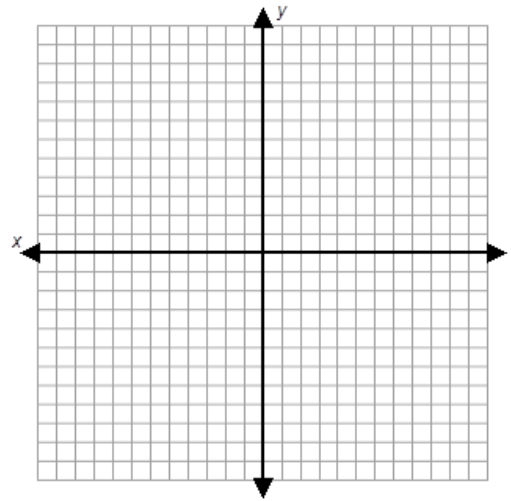
Point – slope form: _____

Standard form: _____

Example 3: Rewrite standard form in slope-intercept form.

Given $2x + 3y = 18$, rewrite the equation in slope-intercept form. Identify the slope and y-intercept.

Then graph the line.



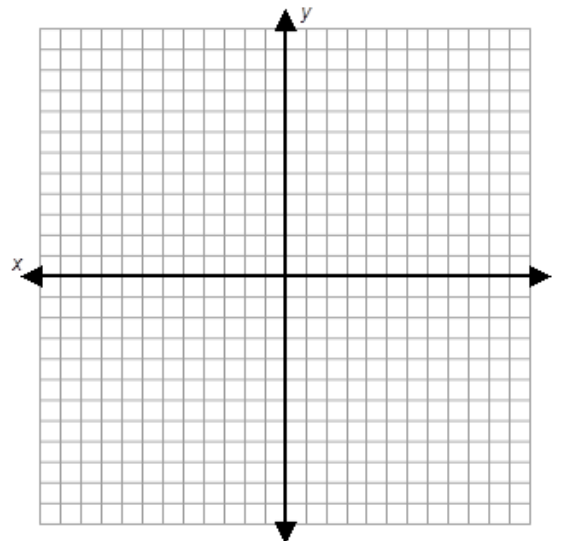
Can we graph an equation from standard form without rewriting it in slope-intercept form first? Of course we can!!! We can use the x-intercept and y-intercept.

Example 8: Graph a line with the equation in standard form.

a) Given $7x + 5y = -14$, graph the line using intercepts.

To find the x-intercept, let _____, then solve for _____.

To find the y-intercept, let _____, then solve for _____.



- b) Graph $3(y-2)=5x-12$ and $10x-6y=12$ on the same coordinate plane. Then use the graph to estimate how many solutions the equations share.

