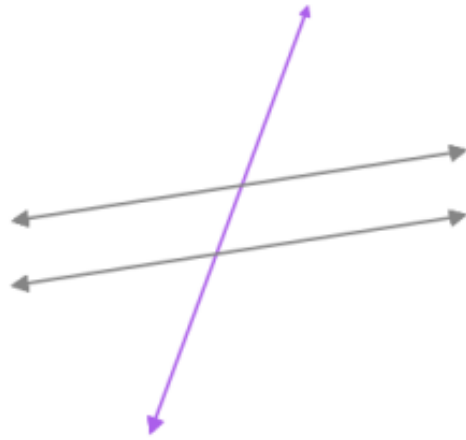
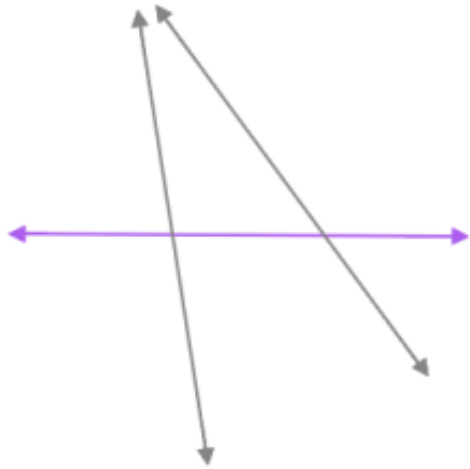


Lines

Straight lines will intersect only once unless they are parallel



Finding coordinates on lines

$$X + Y = 20$$

$$2X + 3Y = 12$$

$$4X + 12 = 20 - 4X$$



Lines

$$Y = mx + b$$

m = slope

b = y intercept



Lines

$$Y = mx + b$$

$m = \text{slope}$

$b = y \text{ intercept}$

$$Y = 3x + 18$$

$\text{Slope} = 3$

$y \text{ intercept} = 18$



Lines

If two lines have the same slope, they are parallel

e.g. $y = \frac{2}{3}x + 18$

$y = \frac{2}{3}x + 23$



Lines

If two lines have the same slope, they are parallel

e.g. $y = \frac{2}{3}x + 18$

$$y = \frac{2}{3}x + 23$$

$$y = 35x + 18$$

$$y = 35x + 45$$

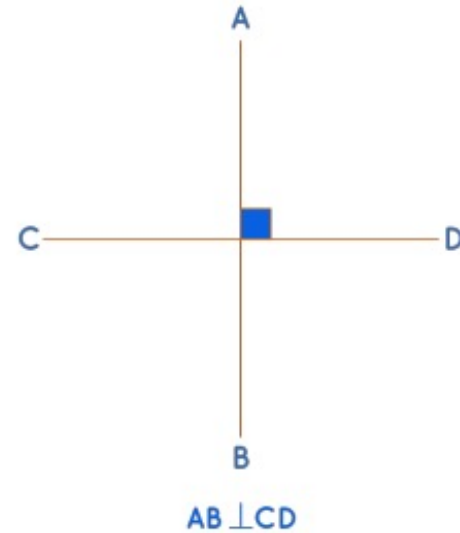


Lines



If the slope two lines are the negative reciprocal, then they are perpendicular

Perpendicular Lines



Lines

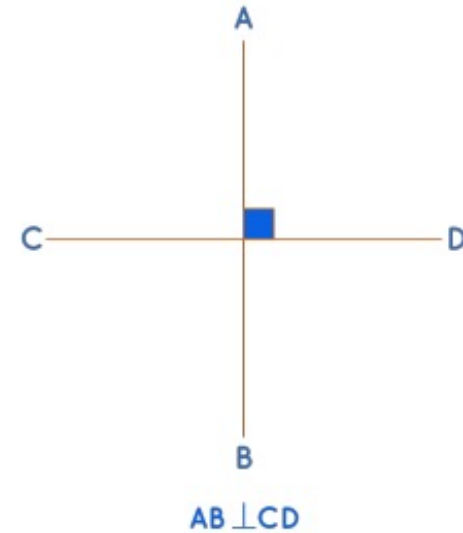


If the slope two lines are the negative reciprocal, then they are perpendicular

$$y = \frac{2}{5}x + 18$$

$$y = -\frac{5}{2}x + 18$$

Perpendicular Lines



Lines



If the slope two lines are the negative reciprocal, then they are perpendicular

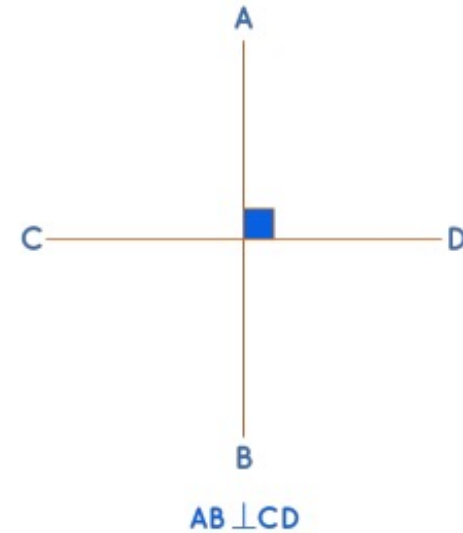
e.g. $y = -\frac{1}{2}x + 18$

$$y = 2x + 18$$

$$y = \frac{2}{5}x + 18$$

$$y = -\frac{5}{2}x + 18$$

Perpendicular Lines



Lines



If the slope two lines are the negative reciprocal, then they are perpendicular

e.g. $y = -\frac{1}{2}x + 18$

$$y = 2x + 18$$

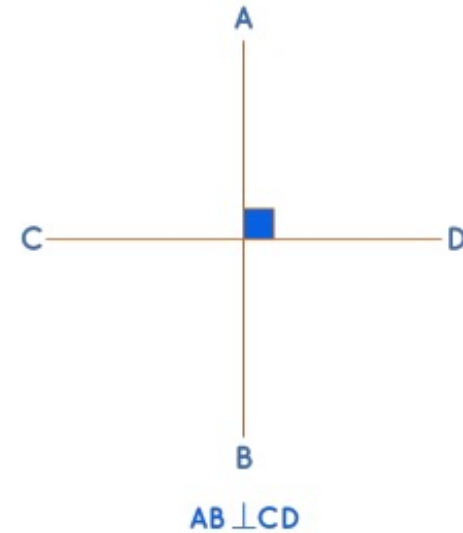
$$y = \frac{2}{5}x + 18$$

$$y = -\frac{5}{2}x + 18$$

$$y = 6x + 18$$

$$y = -\frac{1}{6}x + 18$$

Perpendicular Lines



Points on a line

Equation of line is $y = 2x - 29$

Point K is on that line

The y -coordinate for point K is 21.

What is the x coordinate for point K?

