Perpendicular Lines
Part 2
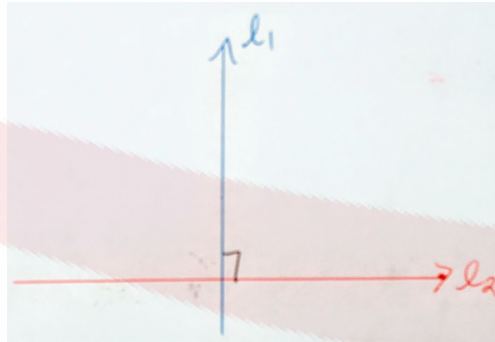
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2020

Perpendicular Lines

What does perpendicuar mean? Two lines are said to be perpendicular when the angle between the two lines at the point of intersection is 90°, then the two lines are *perpendicular*.

How are the slopes of perpendicular lines related? If two lines l_1 and l_2 are perpendicular then the slope of l_1 is the negative reciprocal of the slope of l_2.

$$m_1 = -\frac{1}{m_2}$$

where m_1 is the slope of line l_1 and m_2 is the slope of line l_2.

Exercises

1. Write the equation of the line perpendicular to the line through the points below and through the y-intercept of the line through the points P and Q below.

   a) $P(-1, 1), Q(2, 0)$

   b) $P(3, -2), Q(-5, 1)$

   c) $P(0, 0), Q(6, 3)$

   d) $P(3, -6), Q(1, 1)$

   e) $P(-2, -4), Q(9, 8)$