

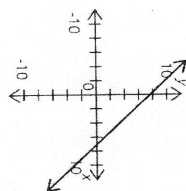
MPM 2D - Worksheet

- Determine the slope of the line that passes through each pair of points.
 - (5, 2) and (-1, 8)
 - (-8, 1) and (-9, 2)
 - (3, 7) and (-5, -9)
 - (-4, 0) and (4, 6)
- Write, in the form $y = mx + b$, the equation of the line that has
 - a slope of 2 and a y -intercept of 8
 - a slope of $\frac{3}{4}$ and a y -intercept of -6
 - a slope of 6 and passes through (1, 5)
 - a slope of $\frac{5}{6}$ and passes through (-12, 3)
- Express each equation in standard form.
 - $3x + y = 10$
 - $-2x - 2y - 8 = 0$
 - $6x + 3y = 12$
 - $2x - 3y = 5$
 - $\frac{5}{2}x - \frac{3}{4}y = \frac{1}{3}$
- For each line in question 1
 - draw a diagram and determine the y -intercept
 - determine the equation of the line in the form $y = mx + b$
 - express the equation in standard form
- Are the lines with the given slopes parallel, perpendicular, or neither?
 - $m_1 = 5, m_2 = \frac{1}{5}$
 - $m_1 = -3, m_2 = \frac{1}{3}$
 - $m_1 = \frac{3}{4}, m_2 = 0.75$
 - $m_1 = -0.6, m_2 = \frac{3}{5}$
 - $m_1 = \frac{4}{7}, m_2 = -1\frac{3}{4}$
- Write an equation for the line that is
 - parallel to $x = 3$ and passes through (-4, 3)
 - parallel to $y = 2$ and passes through (2, 5)
 - perpendicular to $x = -1$ and passes through (-2, -3)
 - perpendicular to $y = 4$ and passes through (1, 1)
 - parallel to $y = -2x + 3$ and passes through (-2, 1)
 - perpendicular to $y = \frac{3}{2}x + 2$ and has a y -intercept of -2
 - perpendicular to $y = 3x + 4$ and has the same y -intercept as the line $y = 2x - 6$

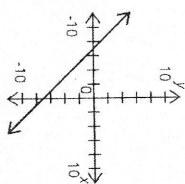
Solutions

- (a) -1
 - (b) -1
 - (c) 2
 - (d) $\frac{3}{4}$
- (a) $y = 2x + 8$
 - (b) $y = \frac{3}{4}x - 6$
 - (c) $y = 6x - 1$
 - (d) $y = \frac{5}{6}x + 13$
- (a) $3x + y - 10 = 0$
 - (b) $x + y + 4 = 0$
 - (c) $2x + y - 4 = 0$
 - (d) $2x - 3y = 0$
 - (e) $30x - 9y - 4 = 0$

4. (a) i. (0, 7)

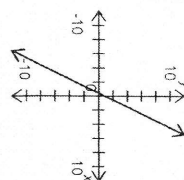


ii. $y = -x + 7$
 iii. $x + y - 7 = 0$
 (b) i. (0, -7)

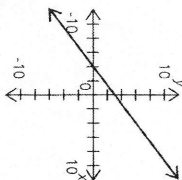


ii. $y = -x - 7$
 iii. $x + y + 7 = 0$

(c) i. (0, 1)



ii. $y = 2x + 1$
 iii. $2x - y + 1 = 0$
 (d) i. (0, 3)



ii. $y = \frac{3}{4}x + 3$
 iii. $3x - 4y + 12 = 0$

- (a) neither
 - (b) perpendicular
 - (c) parallel
 - (d) neither
 - (e) perpendicular
- (a) $x = -4$
 - (b) $y = 5$
 - (c) $y = -3$
 - (d) $x = 1$
 - (e) $y = -2x - 3$
 - (f) $y = -\frac{2}{3}x - 2$
 - (g) $y = -\frac{1}{3}x - 6$