(2)

Name: Madison Copy of Notes

Parallel/Perpendicular Lines

12/19

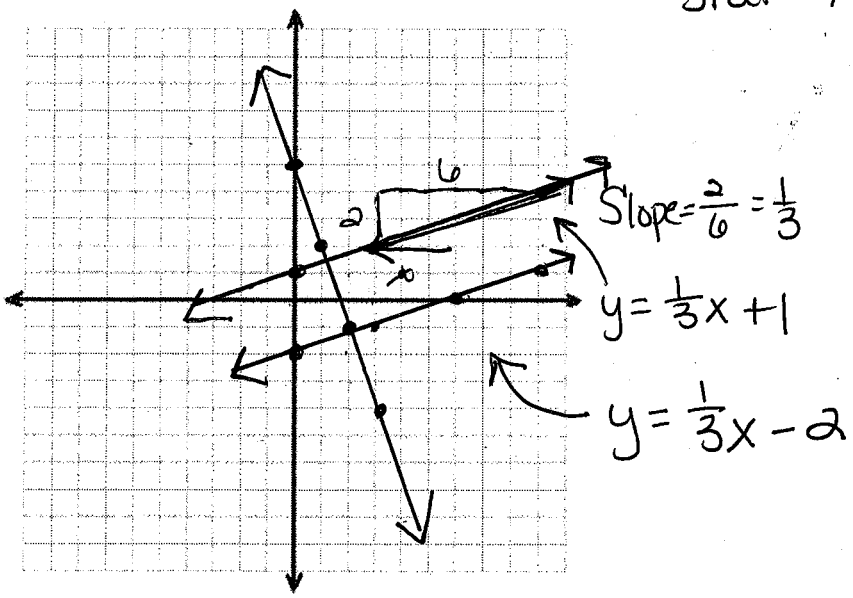
1. What is true about the slopes of parallel lines? Perpendicular lines?

|| lines have congruent slopes

⊥ lines have opposite reciprocal slopes

2. Write the equation of a line, l, passing through the points (3, 2) and (9, 4). Use of the grid below is optional.

Stat → Edit → L_1 → X values → L_2 → y values → enter



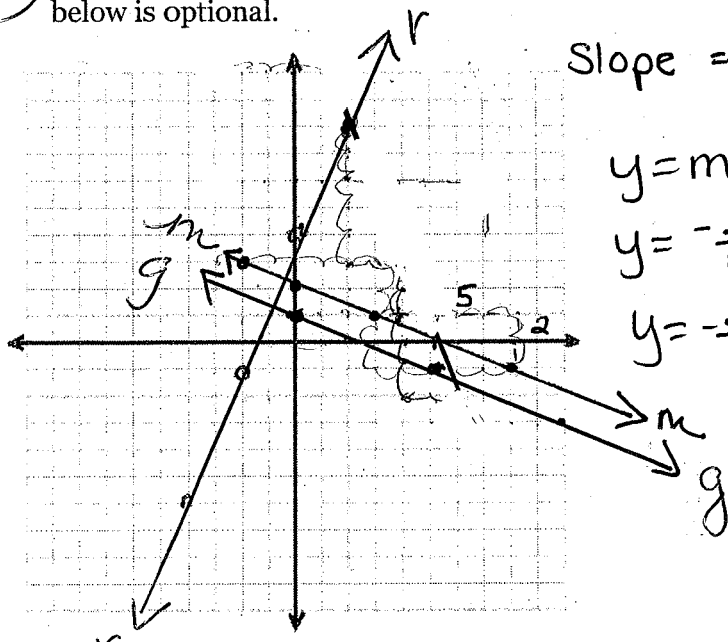
a. Write the equation of a line parallel to line l through the point (6, 0).

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

b. Write the equation of a line perpendicular to line l through the point (1, 2).

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

3. Write the equation of a line, m, passing through the points (3, 1) and (8, -1). Use of the grid below is optional.



Slope = $-\frac{2}{5}$

$y = mx + b$ ← standard equation of a line.

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

$y = -\frac{2}{5}x + 2.2$ (line m)

a. Write the equation of a line parallel to line m through the point (5,-1).

$y = -\frac{2}{5}x + 1$ – line g

↑

same slope for ∥ lines

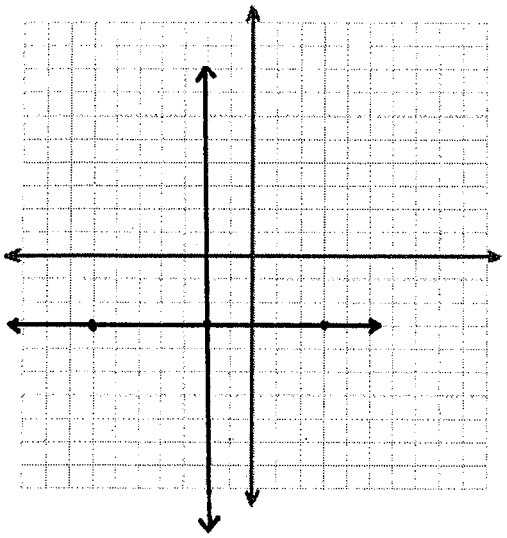
b. Write the equation of a line perpendicular to line m through the point (2, 8).

$y = \frac{5}{2}x + 4$ – line r

↗

opposite reciprocal slope for ⊥ lines

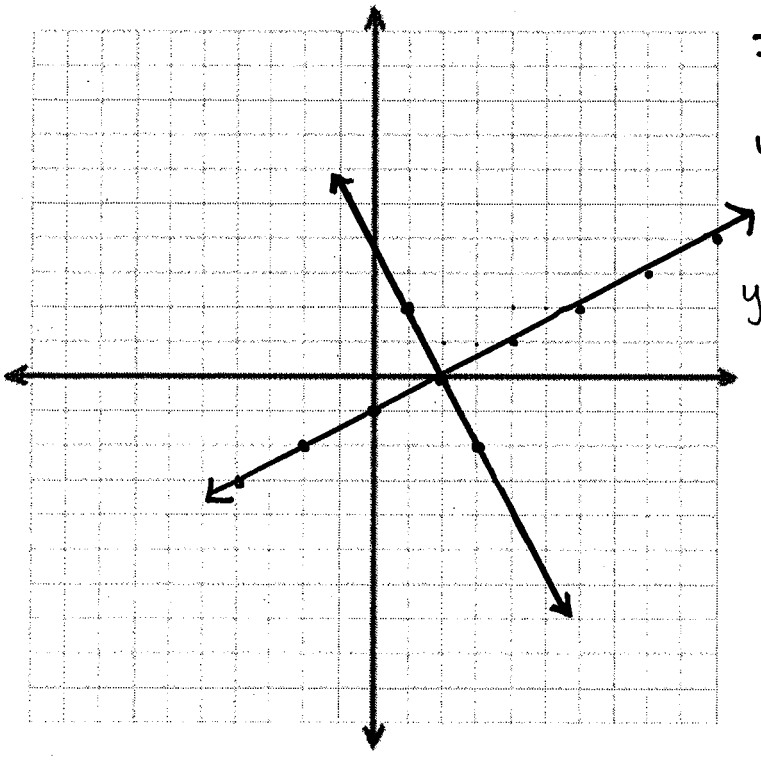
4. Write the equation of the perpendicular bisector of the segment connecting (-7, -3) and (3, -3).



$y = -3$ (original line segment)

$x = -2$ (perpendicular bisector)

5. Write the equation of the perpendicular bisector of the segment connecting (1, 2) and (3 ,-2). Use of the grid below is optional.



$\frac{-4}{2} = -\frac{2}{1} = -2$

$y = -2x + 4$

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