

Math 05, Homework 6 on Sections 5.2 - 5.3

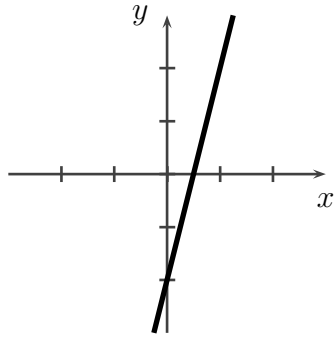
Write all your working out and answers on a separate sheet. It is very important that you show clearly any work you had to do to get the answer. These first ten questions are 2 points each and **the answers are on page 2**.

- (1) Graph the line: $y = 4x - 2$
 - (2) Is the point $(2, 3)$ on the line $y = 2x - 1$?
 - (3) Find the slope of the line between the two points: $(-2, 3)$ and $(1, 3)$
 - (4) Find the slope and y -intercept of the line: $4x + 3y = 2$
 - (5) Show that the two lines $y = -2x + 1$ and $y = \frac{1}{2}x + 3$ are perpendicular.
 - (6) Find the equation of the vertical line through the point: $(-2, 3)$
 - (7) Find the slope-intercept equation of the line through the point $(-1, 1)$ with slope 6.
 - (8) Find the slope-intercept equation of the line through the points: $(3, 2)$ and $(2, 1)$
 - (9) Is $(x, y) = (3, -2)$ a solution to $3x + y \leq 10$?
 - (10) Graph the solution set to the inequality $x - y \leq 2$.
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These next eight questions are 2 points each. Show clearly all your working out and reasoning.

- (11) Graph the line: $3x + y = 3$
- (12) Find the slope of the line between the two points: $(-1, 1)$ and $(2, -1)$
- (13) Find the slope and y -intercept of the line: $5x + 6y = 12$
- (14) Show that the two lines $x + 2y = 3$ and $x + 2y = 4$ are parallel.
- (15) Find the equation of the horizontal line through the point: $(7, 3)$
- (16) Find the slope-intercept equation of the line through the point $(-2, -1)$ with slope 2.
- (17) Find the slope-intercept equation of the line through the points: $(3, 2)$ and $(1, -2)$
- (18) Graph the solution set to the inequality $-x + 2y \geq 4$.

Answers to questions (1)-(10):



(1)

(2) Yes

(3) The slope is 0.

(4) The slope of the line is $-\frac{4}{3}$ and the y -intercept is $(0, 2/3)$.

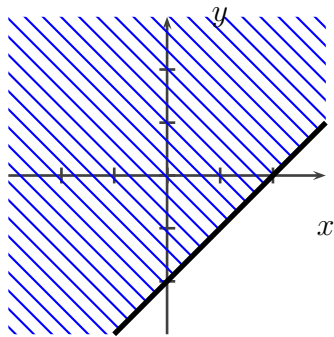
(5) The slope of the first line is -2 and the slope of the second line is $\frac{1}{2}$. The lines are perpendicular since these numbers are negative reciprocals of each other. (Another way to check they are perpendicular is to see that the product $(-2)(\frac{1}{2})$ equals -1 .)

(6) The vertical line through $(-2, 3)$ has equation $x = -2$.

(7) $y = 6x + 7$

(8) $y = x - 1$

(9) Yes it is a solution



(10)