

Math 05, Homework 4 on Sections 3.1, 3.2, 3.3, 3.5
due Mon, Oct 19 at the start of class.

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 1 point each and **the answers are on page 2**.

- (1) For the equation $2x + y = 3$ complete the table of values:
- | | |
|-----|-----|
| x | y |
| -2 | |
| 0 | |
| 2 | |
- (2) Find the x -intercept and the y -intercept of the line $5x + 2y = 10$.
- (3) Graph the line: $x + y = -1$
- (4) Find the slope of the line between the two points: $(-2, 3)$ and $(4, -2)$
- (5) Find the slope and y -intercept of the line: $4x + 3y = 2$
- (6) Show that the two lines $y = -2x + 1$ and $y = \frac{1}{2}x + 3$ are perpendicular.
- (7) Find the equation of the vertical line through the point: $(-2, 3)$
- (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 3 points each. Show clearly all your working out and reasoning.

- (11) Find the x -intercept and the y -intercept of the line $-4x + y = 2$.
- (12) Graph the line: $3x + y = 3$
- (13) Find the slope of the line between the two points: $(-1, 1)$ and $(1, -1)$
- (14) Find the slope and y -intercept of the line: $5x + 6y = 12$
- (15) Show that the two lines $x + 2y = 3$ and $x + 2y = 4$ are parallel.
- (16) Find the equation of the horizontal line through the point: $(0, 3)$
- (17) Find the slope-intercept equation of the line through the points: $(3, 2)$ and $(1, -2)$

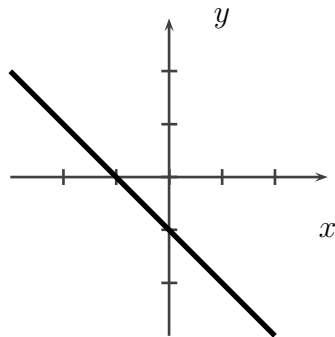
(18) Graph the solution set to the inequality $-x + 2y \geq 4$.

Answers to questions (1)-(10):

(1)

x	y
-2	7
0	3
2	-1

(2) The x -intercept is $(2, 0)$ and the y -intercept is $(0, 5)$.



(3)

(4) The slope is $-\frac{5}{6}$.

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

(6) 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 .)

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

(8) $y = x - 1$

(9) Yes it is a solution

