

1. (8 pts) Graph the linear equation  $5x - 3y = 10$ . Show  $x$ - and  $y$ -intercepts.

2. (7 pts) Graph the linear inequality  $5x - 3y \leq 10$ . Be sure and show the “good stuff” clearly.  
Hint: Use your work from #1.

3. (5 pts) Graph the *intersection* of the following inequalities on the same set of coordinate axes. In other words, assume this is an AND situation, as in class. Hint: Use your work from #2.

$$5x - 3y \leq 10$$

$$3x + 4y \leq 12$$

$$x \geq 0$$

4. (5 pts) Write  $3x + 7y = 11$  using function notation. What is the slope?

5. (5 pts) Use the slope and y-intercept to graph the linear function  $f(x) = \frac{5}{3}x - 7$ . (I don't need to see an x-intercept.)

6. (5 pts) Find the slope of the line through  $(2, -6)$  and  $(-5, 4)$ .
  
  
  
  
  
  
  
  
  
  
7. (5 pts) Find an equation of the line through  $(2, -6)$  and  $(-5, 4)$ . Give your final answer in **point-slope form**. Hint: Use your work from #6. (Shouldn't take much room!)
  
  
  
  
  
  
  
  
  
  
8. (5 pts) Re-write your answer to #7 in **slope-intercept form**.
  
  
  
  
  
  
  
  
  
  
9. (5 pts) Re-write your answer to #7 in **function notation**. (Shouldn't take much room!)
  
  
  
  
  
  
  
  
  
  
10. (5 pts) Re-write your answer to #7 in **standard form**, with only integer coefficients.

Graph the following linear equations:

11. (5 pts)  $y = 11$

12. (5 pts)  $x = -5$

13. (10 pts) Amanda can clean the windows of Benedetto's tropy home in 12 hours. Steve, a much better window washer, can do the job in a mere 15 hours. Steve is *so* good, he doesn't show up until 10:00 a.m. to help. Amanda starts a 6 a.m. What time will the job be finished?

14. (5 pts) Find an equation of the line through  $(2, 5)$  that is perpendicular to  $y = \frac{7}{6}x - 8$ . Give your answer in point-slope form. (Shouldn't take much room!)

15. (5 pts) Find an equation of the line through  $(2, 5)$  that is parallel to  $y = \frac{7}{6}x - 8$ . Give your answer in point-slope form. (Shouldn't take much room!)

16. (5 pts) Convert  $\frac{2}{3}$  hour to minutes.

17. (5 pts) Sketch the graph of  $g(x) = \sqrt{x} + 3$  by transforming the basic function  $f(x) = \sqrt{x}$ .  
Two graphs, total. Key points to track:  $(0,0)$ ,  $(1, 1)$ , and  $(4, 2)$ .

18. (5 pts) Sketch the graph of  $g(x) = (x + 4)^2 + 3$  by transforming the basic function  $f(x) = x^2$ .  
Key points to track:  $(-1, 1)$ ,  $(0,0)$ , and  $(1, 1)$ .