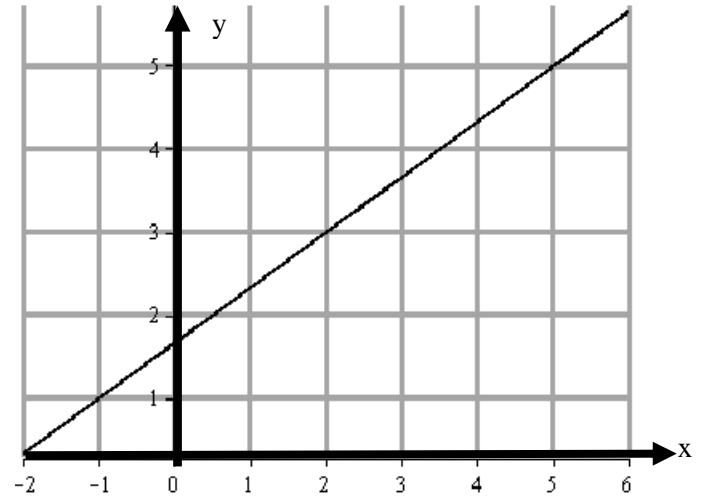


Do your own work. SHOW your work. When in doubt about how stupid I am, assume the worst.

1. (10 pts) Find the slope of the line between the points $(2,3)$ and $(4,-7)$.
2. (5 pts) Find an equation of the line with slope $m = \frac{3}{5}$, and y-intercept $(0,3)$.
3. (5 pts) Find an equation of the line with slope $m = \frac{3}{5}$ that contains the point $(4,-7)$.
4. (5 pts) Find the slope-intercept form of the line you obtained in #3.
5. (5 pts) Find the standard form of the line you obtained in #3. Your work from #4 should have you partway home on this one.

6. (10 pts) Find an equation of the line whose graph is shown. (Hint: Pick your points in such a way as to make the arithmetic easier.)



7. (10 pts) What is the slope of a line that is...

a. ... parallel to the line $7x - 3y = 11$?

b. ... perpendicular to the line $7x - 3y = 11$? (Basing your answer on part a is just fine.)

8. (10 pts) Sketch the graph of the linear inequality $4x - 3y \geq 12$.

9. (5 pts) Sketch the graph of the line $y = \frac{2}{3}x - 5$.

10. (20 pts) Let $f(x) = x^2 - 3x + 2$ and $g(x) = 2x - 7$. Find and simplify the following:

a. $f + g$

b. fg

c. $\frac{f}{g}$

d. $f \circ g$

11. (5 pts) Let $f(x) = x^2 - 3x + 2$. Simplify the difference quotient $\frac{f(x+h) - f(x)}{h}$.

12. (10 pts) Suppose y varies jointly with x and w and inversely with the square of z . If $y = 10$, when $x = 4$, $w = 5$ and $z = 2$, please come up with an equation relating y to x , w , and z . Then use that equation to tell me what y is when $x = 7$, $w = 3$ and $z = 4$.

Answer up to 2 bonus questions for up to 15 points. I will grade the first 2 you do work on, unless you tell me to omit them.



1. (5 pts) Consider the equation $ax^2 + bx + c = 0$. Write the discriminant.
2. (5 pts) What's the solution of the equation $ax^2 + bx + c = 0$?
3. (5 pts) Solve the inequality $|2x - 3| \geq 3$
4. (5 pts) Factor $420x^2 - 332x - 1155$ into the product of two binomials.
5. (5 pts) Factor $375x^3 - 24y^9$
6. (5 pts) Use Pascal's triangle to expand $(2x - y)^5$
7. (5 pts) Factor $4x^2 - 20x + 17$ (It doesn't factor over the rationals! Your 'ac' method won't work!).