Math 126 Name_____
Exam 2
Spring 2015 Show ALL work

1) Find all solutions (real or complex) of $x^2 - 2x + 5 = 0$

2) Write $\frac{3 - 4i}{2 + i}$ in the form a + bi

3) Find all real solutions of the equation.

a) $x^4 - 8x^2 - 9 = 0$

b) $\sqrt{2x+3} = 2x + 1$

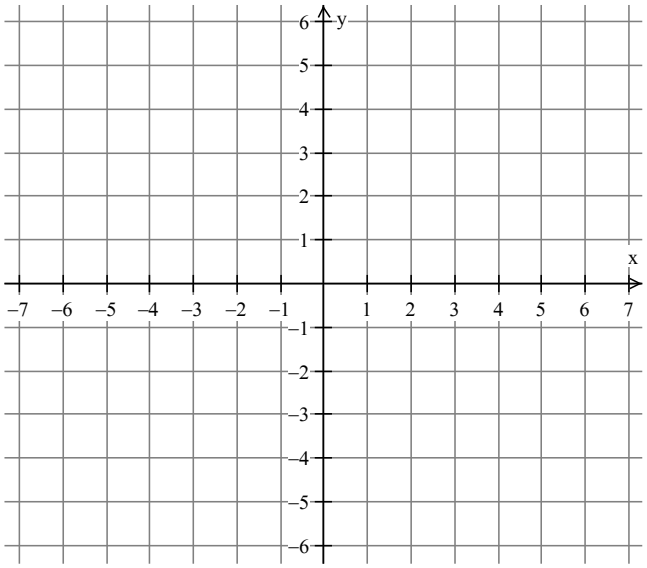
c) $|\ 3x - 2\ | = 4$

4) Solve the inequality. Graph the solution set on the real number line.

a) $x^2 + 4x - 12 > 0$

b) $|\ 2x - 1\ | \leq 3$

5) Find the intercepts and graph by plotting points $y = x^2 - 4$.



6) Let $P_1 = (2, -3)$ and $P_2 = (4, 5)$

a) Find the distance between P_1 and P_2

b) Find the midpoint of the line segment containing P_1 and P_2.

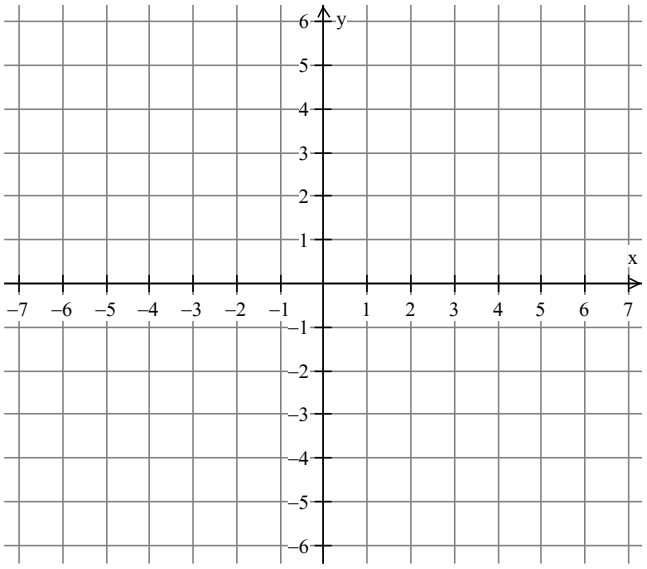
c) What is the slope of the line containing P_1 and P_2?

d) What is the equation of the line through P_1 and P_2?

e) What is the equation of a line through P_1 with undefined slope?

7) What is the slope of any line perpendicular to 2x + y = 6? _____

8) Graph the line containing the point (1, 3) and having slope -2.



9) What is the center and radius of the circle $(x-2)^2+(y+1)^2=5$?

10) Find the standard equation of the circle with general equation
$x^2+y^2-8x+2y+8=0$