

Exam 3a Intermediate Algebra 2 804-203**Spring 2009****Name** _____

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Problems 6 and 7 are worth 14 points. All other problems are worth 12 points.

1. Solve by completing the square : $2x^2 - 8x + 26 = 0$

Solve the following equations for all real roots by any method.

2. $4x^2 = 8 - 16x$

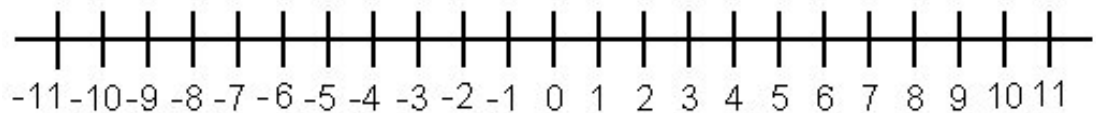
3. $\frac{2x-3}{x+3} + \frac{3}{x^2+x-6} = 1$

4. $x = \sqrt{x+6}$

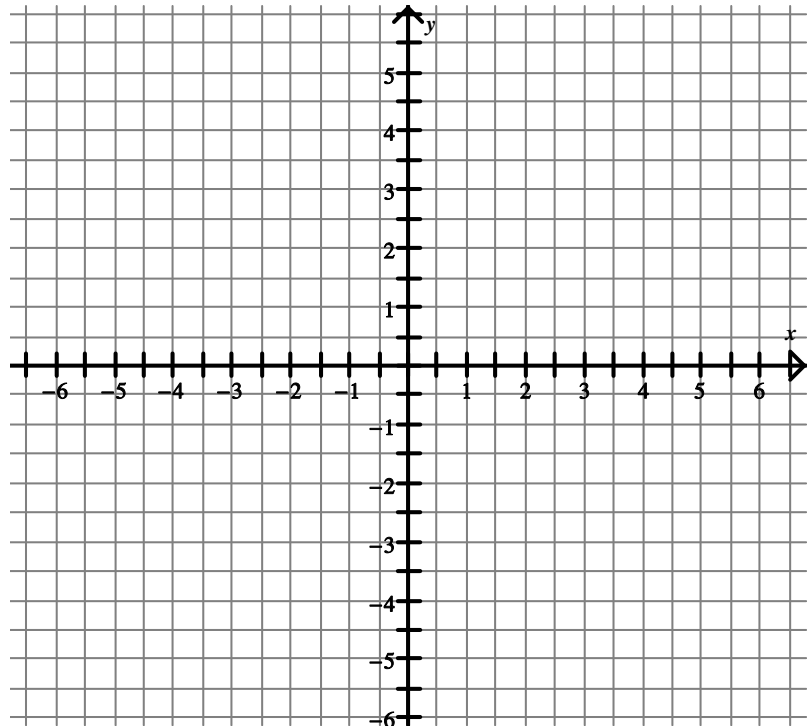
5. $\sqrt{2x+3} - \sqrt{x+1} = 1$

6. Solve and graph the following quadratic inequality:

$$x^2 \leq x + 6$$



7. Given the parabola : $y = f(x) = x^2 - 6x + 6$ determine the coordinates of the vertex, give the equation of the axis of symmetry and sketch the curve.



8. A storage tank has two inlet pipes. The smaller inlet takes 20 minutes longer by itself to fill the tank than does the larger pipe. When both inlets are open the tank fills in 24 minutes. How long does it take the large inlet acting alone to fill the tank?