Name: _____ **PID:** _____

TA: _____ **Sec. No:** _____ **Sec. Time:** _____

Math 3C
Practice Exam 2
Winter, 2011

Turn off and put away your cell phone.
You may not use calculators, books or other assistance during this exam.
Read each question carefully, and answer each question completely.
Show all of your work; no credit will be given for unsupported answers.
Write your solutions clearly and legibly; no credit will be given for illegible solutions.
If any question is not clear, ask for clarification.

1. (a) Solve the inequality and write the solution in interval notation.

$$w - 1 > \frac{w + 5}{w - 1}$$

(b) Graph the solution on the axis provided.

2. Let $\alpha = \pi/2$ and $\beta = \pi/3$, given in radians. Evaluate the following exactly:

   (a) $\cos(\alpha - \beta)$

   (b) $\tan(\alpha + \beta)$

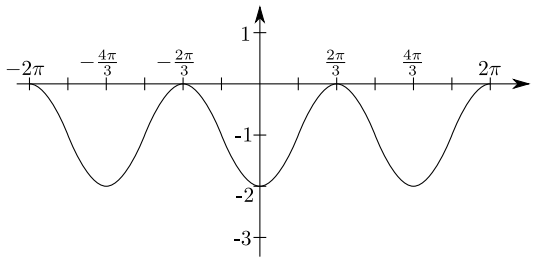
   (c) $\arccos(\cos(\alpha/2))$

3. What is the vertex of the parabola $2x^2 - 2x + 1$?

4. Factor

$$2x^3 + 5x^2 + 8x + 20.$$

5. Find numbers A, B, C, D so that the graph below is the graph of $A\cos(B(\theta + C)) + D$.



6. A hungry cat lying on the ground admires a bird at the top of a telephone pole which meets the ground 20 feet away. If the angle of inclination between the cat and the bird is 60°, what is the height of the bird?