

Name: _____ PID: _____

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

Math 3C
Practice Exam 1
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. Consider the absolute value inequality $|x - 3| \geq 5$.

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

(b) Graph the solution from part (a) on the axis provided.



2. Find the center and radius of the circle:

$$x^2 - 4x + y^2 + 3y = 0$$

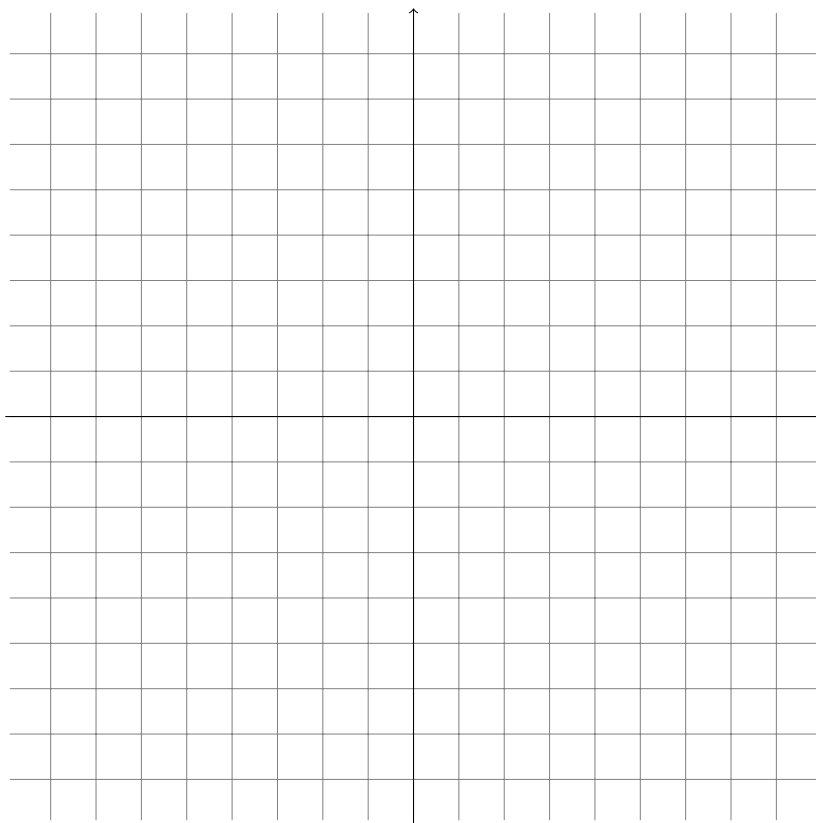
3. (a) Find an equation for the line going through the points $(1, 2)$ and $(3, 1)$.

(b) Find an equation for the line parallel to the line found in (a) which goes through the origin $(0,0)$.

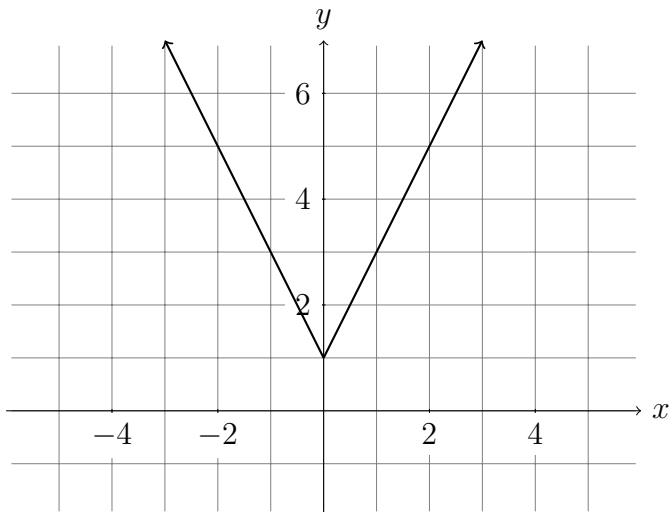
4. (a) Find the inverse of the function:

$$f(x) = -(x + 2)^{1/3}$$

(b) Graph your answer to part (a) on the axes provided.



5. (a) Find a formula for the piecewise function whose graph is:



(b) Write a formula for the function from part (a) using absolute value (not piecewise) notation.

6. Let $f(x) = x - 10$, $g(x) = x^2$, and $h(x) = 3x + 1$.

(a) Find $f(g(h(x)))$.

(b) Evaluate $f(g(h(x)))$ at $x = -1$.