

## PRACTICE EXAM I

MAT 122 · FALL 2008

You must show all work to get full credit.

**Problem 1.** Find the equation of a line that is parallel to  $y = -\frac{x}{4} + 8$  and goes through point (4,4). Now find the equation of the perpendicular with  $x$ -intercept (-8,0). 20 points

**Problem 2.** Find the inverse function of  $f$  given by

$$f(x) = \frac{x + 1}{x - 2}$$

20 points

**Problem 3.** Find the solution to the expression  $|2(x + 4) + x| \leq 16$ . 20 points.

**Problem 4.** For  $f(x) = 2x + 3$  and  $g(x) = -x^2 + 1$ , find the composite function defined by  $(f \circ g)(x)$  20 points.

**Problem 5.** Functions  $f$  and  $g$  are as sets of ordered pairs

$$f = \{(-2, 1), (0, 3), (4, 5)\}$$

and

$$g = \{(1, 1), (3, 3), (7, 9)\}$$

Find the composite function defined by  $g \circ f$  and describe its domain and range. 20 points

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