

# Math 2143 - Brief Calculus with Applications

Homework #2 - 2008.01.22

Due Date - 2008.01.29

Name: \_\_\_\_\_

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1. Write the function  $f(x) = \left| \frac{7}{5}x - 9 \right|$  as a piecewise function and without absolute values.

2. Write the function  $g(x) = |x^2 + 8x - 9|$  as a piecewise function and without absolute values.

3. State the domain of the following functions.

a)  $h(x) = \sqrt{9x + 2}$

b)  $i(x) = \sqrt[3]{9x + 2}$

4. Consider the function given by

$$j(x) = \begin{cases} -x + 4, & x < -12, \\ 2x + 3, & -12 \leq x < -2, \\ 4x^2 - 2x + 3, & -2 \leq x \leq 1, \\ |x + 2|, & 1 < x. \end{cases}$$

a) Find  $j(-15)$

b) Find  $j(12)$

c) Find  $j(-2)$

d) Find  $j(1)$

e) Find  $j(-12)$