

NAME: _____

MATH 11009

HOMEWORK #5 (10 pts)

SPRING 2013

SHOW ALL WORK FOR FULL CREDIT — PLEASE CIRCLE YOUR FINAL ANSWER

EXACT ANSWERS ONLY – SIMPLIFY ALL ANSWERS

DUE: TUESDAY, MARCH 12, AT THE BEGINNING OF CLASS

1. (1 pt) Let $H(x) = 4 - 9(5x + 7)^3$. Find nontrivial functions f and g such that

$$(f \circ g)(x) = H(x)$$

2. (1 pt each) Given $f(x) = x^2 - 8x + 3$ and $g(x) = 5 - 3x - 2x^2$, find

(a) $(f \circ g)(-1)$

(b) $(g \circ f)(2)$

Homework Score:

Course Grade:

10

378 =

3. (1 pt each) Given $f(x) = 6x - 5$ and $g(x) = 3x^2 - 2x + 9$, find and simplify

(a) $(f \circ g)(x)$

(b) $(g \circ f)(x)$

4. A manufacturer of garage doors has monthly fixed costs of \$25,500 and variable costs of \$120 per garage door. Each garage door sells for \$475 per unit.

(a) (1 pt) Write the function that models the cost C from the production of x garage doors.

(b) (1 pt) Write the function that models the profit P from the production and sale of x garage doors.

(c) (1 pt) What is the profit if 200 garage doors are produced and sold?

5. (1 pt) Find the inverse of $f(x) = \frac{5}{7}x - 3$.

6. (1 pt) Find the inverse of $f(x) = \frac{4x - 3}{7}$