Name:_____.

MATH 115 - SEC 011, WINTER 2011. QUIZ 2
TIME LIMIT: 15 MINUTES

INSTRUCTOR: GERARDO HERNÁNDEZ

Good luck!

Problem 1 One hundred kilograms of radioactive substance decay to 40 kg in 10 years. How much remains after 20 years?

Problem 2 The Bay of Fundy in Canada has the largest tides in the world. The difference between low and high water levels is 15 meters (nearly 50 feet). At a particular point the depth of water, y meters, is given as a function of time, t, in hours since the midnight by

$$y = D + A\ cos(B(t - C))$$

(a) What is the physical meaning of D?

(b) What is the value of A?

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(c) What is the value of B? Assume the time between successive high tides is 12.4 hours.

(d) What is the physical meaning of C?

Problem 3

(a) If $f(x) = ax^2 + bx + c$, what can you say about the values of a,b, and c if

(1) $(1, 1)$ is on the graph of $f(x)$?

(2) $(1, 1)$ is the vertex of the graph of $f(x)$? [Hint: The axis of symmetry is $x = -b/(2a)$]

(3) The y intercept of the graph is $(0, 6)$?

(b) Find a quadratic function satisfying all three conditions.