

MATH 133 – Calculus with Fundamentals 1

Quiz 2 – September 17, 2015

Your Name: _____

Directions

Do all work in the spaces provided below and on the back. There are 30 total points possible. You may use a calculator (but not any graphing features).

Questions

- 1) (10) Complete the square in $q(x) = -2x^2 + 4x + 6$ and use your results to find the maximum value of $q(x)$.

- 2) (10) Express $h(x) = \frac{\cos(2x)}{\cos^2(2x)+1}$ as a composition $h = f \circ g$. (Several different pairs f, g are possible. Any correct one with $g(x)$ something different from $g(x) = x$ is OK.)

- 3) (10) Starting from location $x = 0$ along a straight-line road, you drive in the positive x -direction for one hour at 50 miles per hour. At that point you stop for a road-side picnic which lasts one hour, then you continue in the same direction for an additional hour at 45 miles per hour. Let $x(t)$ be your position as a function of time. Sketch a graph of $x(t)$ and give a formula for $x(t)$ as a piece-wise defined function.