Quiz #5

Show your work for all problems. Answers without proper justification may not receive full credit. No use of notes, the textbook, or calculators is permitted on the quiz. There are problems on both sides of the page. Don’t forget to write your name on the quiz!

#1. Write each of the following expressions as a single exponential:
   a) $e^{x+2}e^3$
   
   b) $\frac{2^{3x+1}}{2^{2x}}$

#2. An object tossed upwards at 10 meters per second has height (in meters) at time $t$ given by the function $h(t) = -5t^2 + 10t$. How long will it take the object to reach a height of 4 meters?

There are problems on the other side of this page.
#3. Sketch a graph of the function \( f(x) = -2x^2 + 4x \) on the axes below by using algebra to find the vertex and any \( x \)- and \( y \)-intercepts. Identify these points on the graph.

There are problems on the other side of this page.