# Math 157 - Quiz 5

Name _____

September 30, 2015

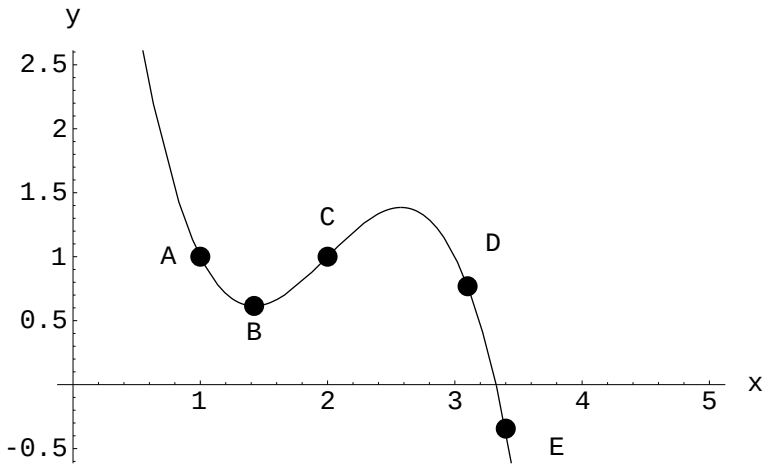
Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) Let $f(x) = \dfrac{x}{x-1}$. It can be shown that $f'(x) = \dfrac{-1}{(x-1)^2}$. Use this information to find an equation of the line tangent to the graph of $f$ at the point where $x = 2$.

2. (3 points) The function $g(x)$ is a linear function whose graph passes through the origin. Determine a formula for the function $g$ if $g'(1) = 5$.

3. (3 points) The graph of the function $h$ is shown below. Determine whether $h'(x)$ is negative, positive, or zero at each of the indicated points.




4. (1 point) Refer back to problem #1. Find the instantaneous rate of change of $f$ at $x = 3$.