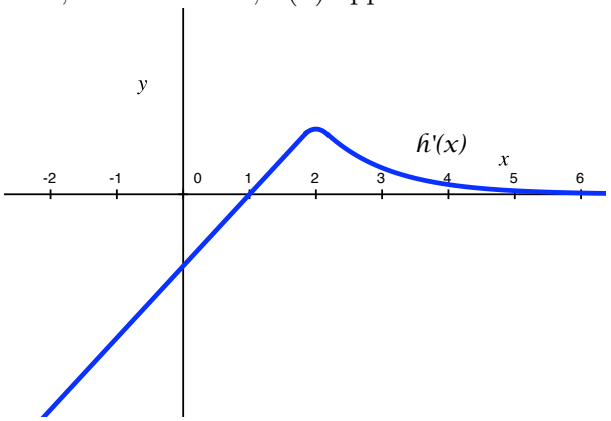
Math 151 Quiz #4 Answers

1. $h(x)$ has slope 0 at $x = 1$ $\Rightarrow$ $h'(1) = 0$
   For $x < 1$, the slope of $h(x)$ is negative $\Rightarrow$ $h'(x)$ is negative for $x < 1$.
   For $x > 1$, the slope of $h(x)$ is positive $\Rightarrow$ $h'(x)$ is positive for $x > 1$.
   Also, as x increases, $h(x)$ approaches a horizontal asymptote $\Rightarrow$ $h'(x)$ approaches 0 as x increases.



2. $x = -1$ and $x = 2$ (To find the x-values, you are trying to find where $g'(x) = 12$, i.e., where $6x^2 - 6x = 12$. You can solve this equation by factoring or using the quadratic formula.)

3. Velocity at 1 second = 2 meters/sec

   (The velocity is given by $v = \frac{ds}{dt} = 3t^{-4/5} - t$. Evaluate this at $t = 1$ to get the velocity at 1 second.)

4. $\frac{dy}{dx} = 12x^3e^x + 3x^4e^x + 7$ (You must use the product rule on the first term.)