1. Warm up

- Match graphs in the left column with their derivatives in the right column.

- Where is the function $3x - e^x$ increasing?
2. Jeremy and Khang are seeing who can jump higher. Jeremy’s height off the ground function is $h_1(t) = 2t - 5t^2$ and Khang’s height off the ground function is $h_2(t) = 3t - 4t^2$ (They experience different amounts of gravity for some unknown reason). Find both of their velocities after $t$ seconds. Find the time when their velocities are 0. Find their heights when their velocities are 0. Who jumped higher and who was in the air for longer?

3. Gene Block is studying drugs that influence swole gains. After doing a careful AF experiment, Gene finds the best fitting equation to be $W = 1 + 0.4D - 0.3D^2$ where $D$ is the dose level in mg and $W$ is the difference in weight measured in pounds. Find $\frac{dW}{dD}$. What’s the best dose to take to maximize gainz?

4. Find the tangent line to $e^x - e^{-x}$ at $x = 1$. 

The End.