

YOUR NAME: \_\_\_\_\_

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. A moving object is following a vertical motion and its height  $h(t)$  in meters at time  $t$  in seconds into its motion is given by  $h(t) = -3t^2 + 36t + 20$ . Find at which height the moving object is momentarily at rest (i.e., its velocity is zero).

2. Use the rules for computing derivatives to compute the derivatives of the following functions:

(a)  $f(x) = (3x + 7)^{10}(x^2 + 11)^5$

(b)  $g(x) = \frac{1}{\sqrt[3]{(5x^2 - 3x + 11)^2}}$