

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 neatly all your work**. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Suppose that a company manufactures toasters and sells them for \$25 each. The costs incurred in the production and sale of the toasters are \$100,000 plus \$10 for each toaster produced and sold.
 - (a) Write the profit function for the production and sale of x toasters.
 - (b) Find the marginal profit and state correctly its unit.
2. The percent p of high school seniors using marijuana daily can be modeled by $30p - 19x = 30$, where x is the number of years after 1990.
 - (a) Use this model to determine the slope of the graph of this function if x is the independent variable.
 - (b) What is the rate of change of the percent of high school seniors using marijuana per year?
 - (c) Sketch the graph of $p(x)$ for appropriate values of x . Make sure to label your axes.