

0. Print your name: _____

1. The total annual sales for math-cola is a function $S(p, A)$ of p , the price charged, and A , the advertising budget. Do you expect S to be increasing or decreasing as a function of p ? of A ?

2. Newton's law of cooling says that the temperature $T(t)$ of bowl of ice cream placed in a room satisfies an equation of the form $\frac{dT}{dt} = k(T - 70)$, where k is some constant. This equation is an example of what sort of equation? And do you expect k to be positive or negative? Why?

3. Find sum of the infinite series $1 + \frac{1}{2} + \frac{1}{2^2} + \frac{1}{2^3} + \dots$