

Name: _____

Score: _____

Instructions: You must show supporting work to receive full and partial credits. No text book, notes, formula sheets allowed.

1(5pts) Use the definition of derivative to find $f'(x)$ if $f(x) = (x + 1)^2$. (No points for any other method.)

2(5pts) The cost to produce x units in **thousand** of a television is given by $C(x) = 1,000 + 100x - 0.5x^2$ in thousands of dollars.

(a) Find the marginal cost when 50 thousands TV sets are produced.

(b) Use the marginal cost to estimate the additional cost to produce 500 more after 50 thousands have been made.