

Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise.

1. The revenue function for selling x units of a product is $R(x) = 9x - 0.03x^2$.
 - (a) Find the marginal revenue when production is at $x = 10$
 - (b) Interpret your answer from part (a)
2. A company manufactures vinyl records for customers. They charge each customer \$5000 plus \$5.50 for each record manufactured. In terms of raw materials, it costs the company \$3.50 per record for materials and labor, plus \$15,000 for equipment and other costs.
 - (a) Find the Revenue, Cost, and Profit functions for this business.
 - (b) What is the revenue, cost, and profit from producing 100 records?
3. At time t seconds, the position of a body moving along the x -axis is $s(t) = t^3 - 6t^2 + 9t$ meters.
 - (a) Find the body's acceleration each time the velocity is zero.
 - (b) Find the body's velocity each time the acceleration is zero.