

1. Marginal revenue is the rate of change of revenue with respect to the number of units purchased, measured in dollars per unit. Suppose the marginal revenue when a company sells

$q$  units of a new product is given by  $R'(q) = 26 - 0.04q$

Compute and interpret  $\int_{200}^{300} R'(q) dq$

2. An object moves along a line so that its velocity at time  $t$  is  $v(t) = t^2 - t - 6$  (measured in meters per second).

a) Find the displacement of the object during the time period  $1 \leq t \leq 4$

b) Find the distance traveled during the time period  $1 \leq t \leq 4$

3. Compute the average value of  $f(x) = 1 + x^2$  on the interval  $[-1, 2]$

4. The temperature (in  $^{\circ}F$ ) in Mexico City  $t$  hours after midnight during a day in April was modeled by the function  $T(t) = -.017t^3 + 0.53t^2 - 2.9t + 65$   
Find the average temperature during that day from 8 AM to 6 PM.