

$$3. C = 0.01x^2 + 5x + 20 \quad x=10 \quad dx = \Delta x = 1$$

$$\frac{dC}{dx} = 0.02x + 5$$

$$\cancel{dx} \cdot \left(\frac{dC}{\cancel{dx}} \right) = (0.02x + 5) dx$$

$$dC = (0.02 \cdot 10 + 5) \cdot 1 \\ = \boxed{5.2}$$

$$4. R = 40x - 0.2x^2 \quad x=25 \quad dx = \Delta x = 1$$

$$\frac{dR}{dx} = 40 - 0.4x$$

$$dR = (40 - 0.4x) dx \\ = (40 - 0.4(25)) \cdot 1 \\ = \boxed{30}$$

$$5. P = -x^2 + 40x - 30 \quad x=10 \quad dx = \Delta x = 1$$

$$\frac{dP}{dx} = -2x + 40$$

$$dP = (-2x + 40) dx \\ = [-2(10) + 40] \cdot 1 \\ = \boxed{20}$$