1. (a)   i. $y' = \dfrac{1}{8}\left[(4x^2 - 3x)^{10} \cdot 21(1 - x)^{20} \cdot (-1) + (1 - x)^{21} \cdot 10(4x^2 - 3x)^9(8x - 3)\right]$

    ii. $s'(t) = -7(2t)^{-8} \cdot (2) - \dfrac{3}{5}\left(-3t^{-4}\right)$

    (b)   i. slope$=-0.2$

    ii. $y = -0.2x - 0.1$

2. (a) from $q = 0$ to $q = 1960$ Things

    (b) from $q = 0$ to $q = 96$ Things

    (c) 577,376 dollars

    (d) $q = 39.5$ Things

3. (a) 18.003

    (b) $a = 5$

4. (a) Any one-minute interval between $t = 0$ and $t = 4$.

    (b) Any one-minute interval between $t \approx 4$ and $t = 8$.

    (c) Any one-minute interval between $t = 0.5$ and $t = 4$.

    (d) NONE

    (e) Any one-minute interval between $t = 0$ and $t \approx 1.25$.

    (f) Any one-minute interval between $t = 8$ and $t \approx 9.2$.