

1. [1] $dy/dx = 12x^5 - 22x$

2. [2] for *all* x

3. $P(x) = 275x - 2x^2$ (use (0,200) and (0,10000) for sketch)

(a) [1] 9200 ($P(80) = 275(80) - 2(80)^2$)

(b) [1] -45 ($P'(80) = 275 - 4(80) = -45$)

(c) [1] -47 or -45 (either $P(81) - P(80) = 9153 - 9200 = -47$ or $P'(80) = -45$)