

Part C

Review Soluh-

2 j)

$$y' = 10(5x+10)^9(4x-2)^2 + 12(4x-2)^{11}(4)(5x+10)^{10}$$

$$y' = 50(5x+10)^9(4x-2)^2 + 48(4x-2)^{11}(5x+10)^{10}$$

$$y' = 2(5x+10)^9(4x-2)^{11} \left[25(4x-2) + 24(5x+10) \right]$$

$$y' = 2(5x+10)^9(4x-2)^{11} (220x + 190)$$

$$k) F'(x) = 7 \left(\frac{3x-4}{8x-3} \right)^6 \left[\frac{3(8x-3) - 8(3x-4)}{(8x-3)^2} \right]$$

$$= 7 \left(\frac{3x-4}{8x-3} \right)^6 \left(\frac{23}{(8x-3)^2} \right)$$

$$= 161 \left(\frac{(3x-4)^6}{(8x-3)^8} \right)$$

$$= 161 \left(\frac{(3x-4)^6}{(8x-3)^8} \right)$$

Part C

Solutions Review

$$22) \quad g(x) = \frac{(5x+3)^{1/2}}{2x+7}$$

$$g'(x) = \frac{\frac{1}{2}(5x+3)^{-1/2}(5)(2x+7) - 2(5x+3)^{1/2}}{(2x+7)^2}$$

$$g'(x) = \frac{\frac{5}{2}(2x+7)(5x+3)^{-1/2} - 2(5x+3)^{1/2}}{(2x+7)^2}$$

$$g'(x) = \frac{(5x+3)^{-1/2} \left[\frac{5}{2}(2x+7) - 2(5x+3) \right]}{(2x+7)^2}$$

$$g'(x) = \frac{(5x+3)^{-1/2} \left[5x + \frac{35}{2} - 10x - 6 \right]}{(2x+7)^2}$$

$$g'(x) = \frac{(5x+3)^{-1/2} \left[-5x + \frac{23}{2} \right]}{(2x+7)^2}$$

$$2 \quad a) \quad y = 9x^4 - \frac{1}{3}x^{-2} + x^{1/3} - 5$$

$$y' = 36x^3 + \frac{2}{3}x^{-3} + \frac{1}{3}x^{-2/3}$$

$$b) \quad y' = 2x(6x^3 - 7) + (18x^2)(x^4)$$

$$y' = 2x(6x^3 - 7) + 18x^4$$

$$y' = 12x^4 - 14x + 18x^4$$

$$y' = 30x^4 - 14x$$

$$c) \quad g(x) = (x^{1/2} + 7)(x^{1/2} - 3)$$

$$g'(x) = \left(\frac{1}{2}x^{-1/2}\right)(x^{1/2} - 3) + \left(\frac{1}{2}x^{-1/2}\right)(x^{1/2} + 7)$$

$$g'(x) = \frac{1}{2} - \frac{3}{2}x^{-1/2} + \frac{1}{2} + \frac{7}{2}x^{-1/2}$$

$$g'(x) = 1 + \frac{4}{2}x^{-1/2}$$

$$g'(x) = 1 + 2x^{-1/2}$$