

part c

Solution Review

$$3. \quad y' = \frac{5(6x^2-7) - 12x(5x-2)}{(6x^2-7)^2}$$

$$y'(1) = \frac{5(6(1)^2-7) - 12(1)(5(1)-2)}{(6(1)^2-7)^2}$$

$$y'(1) = \frac{5(-1) - 12(3)}{(-1)^2}$$

$$y'(1) = \frac{-5 - 36}{1} = \boxed{-41}$$

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

$$y'(-1) = 4(3(-1)+4)^2 + 2(3(-1)+4)'(3)(4(-1)-7)$$

$$y'(-1) = 4(1)^2 + 2(1)(3)(-11)$$

$$y'(-1) = 4 - 66$$

$$y'(-1) = -62$$

slope = -62

point = (-1, -11)

Equation -

$$\frac{-62}{1} = \frac{y+11}{x+1}$$

$$\boxed{-62x - 62 = y + 11}$$

Part c Solutions Review

$$2 d) h'(x) = (4 - 20x^3)(7 + 8x^2) + 16x(4x - 5x^4)$$

$$h'(x) = 28 + 32x^2 - 140x^3 - 160x^5 + 64x^2 - 80x^5$$

$$h'(x) = 28 + 96x^2 - 140x^3 - 240x^5$$

$$e) y' = \frac{4(2x+1) - 2(4x-7)}{(2x+1)^2}$$

$$y' = \frac{8x+4 - 8x+14}{(2x+1)^2}$$

$$y' = \frac{18}{(2x+1)^2}$$

$$f) y' = \frac{-10x(6x+2) - 6(9-5x^2)}{(6x+2)^2}$$

$$y' = \frac{-60x^2 - 20x - 54 + 30x^2}{(6x+2)^2}$$

$$y' = \frac{-30x^2 - 20x - 54}{(6x+2)^2}$$

$$5. \quad f'(x) = 2 \left( \frac{1}{2} (2x-5)^{-1/2} (2) \right)$$

$$f'(x) = 2(2x-5)^{-1/2}$$

$$f'(x) = \frac{2}{\sqrt{2x-5}}$$

$$10 = \frac{2}{\sqrt{2x-5}}$$

$$(10\sqrt{2x-5})^2 = (2)^2$$

$$100(2x-5) = 4$$

$$200x - 500 = 4$$

$$200x = 504$$

$$x = \frac{504}{200} = \frac{63}{25}$$

$$x = \frac{63}{25} \quad \& \quad y = \frac{2}{5}$$

$$6. \quad g'(x) = \frac{6x^2}{3} - \frac{10x}{2} - 3$$

$$g'(x) = 2x^2 - 5x - 3$$

$$0 = 2x^2 - 5x - 3$$

$$0 = (2x^2 - 6x) + (x - 3)$$

$$0 = 2x(x-3) + 1(x-3)$$

$$0 = (2x+1)(x-3)$$

$$\boxed{x = -\frac{1}{2}} \quad \boxed{x = 3}$$

$$y = 3$$

$$\underline{\underline{\text{slope} = 0}}$$