$y = \frac{-25}{16}x + \frac{75}{16}$

$16x^4 - 18x^2 + 1$

$= mx + b$

$= \frac{-25}{16} \cdot 2 + b$

$= -\frac{50}{16} + b$

$b = \frac{75}{16}$

$y = \frac{25}{4}x^{-2}$

$y' = -\frac{25}{2x^3}$

$y'(2) = \frac{-25}{16}$

$(2, \frac{25}{16})$

$y = x^6 + 3x^3 + 3x^2 + 9$

$y' = 5x^4 + 9x^2 + 6x$

$$f'(x) = (2x)(3x^3+x) + (x^2+2)(9x^2+1)$$

$$f'(2) = (2\cdot 2)\cdot(3\cdot 2^3+2) + (2^2+2)(9\cdot 2^2+1)$$

$$= 4 \cdot 26 + 6 \cdot 37$$

$$= 104 + 222 = \boxed{326 = m}$$

$$f'(x) = 3\cdot(4x^3+5) + (3x-2)\cdot 12x^2$$

$$= 12x^3+15 + 36x^3 - 24x^2$$

$$f'(x) = 48x^3 - 24x^2 + 15$$

$$f'(1.5) = 48(1.5)^3 - 24(1.5)^2 + 15 = \boxed{123}$$

at $x = -2$

Der 1st · 2nd + 1st · Der. 2nd

$$f'(x) = (2x+1)\cdot(x^3-6) + (x^2+x-3)\cdot 3x^2$$

$$f'(-2) = -3 \cdot -14 + -1 \cdot 12 = \boxed{30}$$

$$h(x) = f(x)\cdot g(x)$$

$$h'(x) = f'(x)\cdot g(x) + f(x)\cdot g'(x)$$

$$f'(x) = \frac{(3x^2+2)\cdot 3 - 3x\cdot 6x}{(3x^2+2)^2} = \frac{9x^2+6-18x^2}{(3x^2+2)^2} = \frac{-9x^2}{(3x^2}$$

$$f'(-1) = \frac{-9(-1)^2+6}{(3(-1)^2+2)^2} = \boxed{\frac{-3}{25}}$$

$x = 2$

$$f'(x) = \frac{x^3(3x^2+2) - (x^3+2x-4)\cdot 3x^2}{x^6} = \frac{3x^5 + 2x^3 - 3x^5 - 6x^3 + 12}{x^6}$$

$$= \frac{-4x^3 + 12x^2}{x^6} = \frac{-4x+12}{x^4}$$

$$f'(2) = \frac{-8+12}{2^4} = \frac{4}{16} = \boxed{1/4}$$

$$f'(x) = \frac{(x^3-5x)\cdot 2x - (x^2+2)(3x^2-5)}{(x^3-5x)^2} =$$

$$F'(x) = \frac{2x^4 - 10x^2 - (3x^4 - 5x^2 + 6x^2 - 10)}{(x^3-5x)^2}$$

$$f'(x) = \frac{-x^4 - 11x^2 + 10}{(x^3-5x)^2} = \frac{-130.37891063}{49.6584727} \approx -2.6$$

$h(x) = f(x) \cdot g(x)$

$h'(x) = f'(x) \cdot g(x) + f(x) \cdot g'(x)$

$h'(3) = f'(3) \cdot g(3) + f(3) \cdot g'(3)$

$= 2 \cdot 6 + 7 \cdot -10$

$= 12 - 70 = \boxed{-58}$