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$$a) f'(x) = 3(1+x^2)^2 \cdot 2x \quad b) f'(x) = \frac{1}{19} \cdot 6(3x+2)^5 \cdot 3 = (3x+2)^5$$

$$c) f'(x) = 2(1-x+x^3) \cdot (-1+3x^2) \quad d) f'(t) = -(8t-7)^{-2} \cdot 8$$

$$e) f'(x) = 6x - 3(x^2-1)^2 \cdot 2x \quad f) f'(x) = 3(-\sin x^2) \cdot 2x$$

$$g) f'(x) = \cos 2x \cdot 2 \quad h) f'(x) = -\frac{1}{4} \cos(2x+1) \cdot 2$$

$$i) f'(t) = 3 \cdot (-2) \cdot (5-t)^{-3} \cdot (-1)$$

$$k) f'(x) = \frac{1}{2} \cdot (-3) \cdot (5x-7)^{-4} \cdot 5$$

$$l) f'(x) = -(\cos x)^{-2} \cdot \sin x = \frac{-\sin x}{(\cos x)^2}$$

$$m) f'(t) = \frac{-2}{t^3} + \cos \frac{1}{t} \cdot \left(-\frac{1}{t^2}\right)$$

$$n) f'(x) = 2(2x+1) \cdot 2 + (-2) \cdot (2x+1)^{-3} \cdot 2 = 4(4x+2) - \frac{4}{(2x+1)^3}$$

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$$a) f'(x) = 2\left(\frac{1}{5}x+1\right) \cdot \frac{1}{5} \quad f'(2) = \frac{14}{25}$$

$$b) f'(x) = -2(5-x) \quad -6$$

$$c) f'(x) = 3(2-3x+x^2)^2 \cdot (-3+2x) \quad 0$$

$$d) f'(x) = -2(5-x)^{-2} \cdot (-1) \quad \frac{2}{3}$$

$$e) f'(x) = -3(7x-2x^3)^{-4} \cdot (7-6x^2) \quad \frac{51}{16}$$

$$f) f'(x) = -\frac{2}{(x-2)^3} \quad 2$$

$$g) f'(x) = -2 \cos(2-x) \quad -2$$

$$h) f'(x) = 12(4x-7)^2 \quad 12$$

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

$$b) f'(x) = -(a+bx)^{-2} \cdot b = -\frac{b}{(a+bx)^2}$$

$$c) f'(x) = -3a(1+x^2)^{-2} \cdot 2x = -\frac{6ax}{(1+x^2)^2}$$

$$d) f(t) = -2a(bt+1)^{-3} \cdot b = -\frac{2ab}{(bt+1)^3}$$

$$e) f'(t) = \cos(at^2) \cdot 2at$$

$$f) f'(x) = \cos(ax)^2 \cdot 2(ax)^1 \cdot a = 2a^2x \cdot \cos(ax)^2$$

$$g) f'(x) = 2(\sin(ax))^1 \cdot \cos(ax) \cdot a = 2a \cdot \sin(ax) \cdot \cos(ax)$$

$$h) f'(t) = \sin(ax)^2 \quad [\sin(ax)^2 = \text{Zell!}]$$