

Chain Rule – Multiple Choice Practice**Name:***Choose the best answer for each problem below.*1) Find the derivative of $f(x) = x^3(3x+1)^5$

- a) $f'(x) = 18x^5(3x+1)^9$ b) $f'(x) = 3x^2(3x+1)^4(8x+1)$ c) $f'(x) = 3x^2(3x+1)^4(8x^2+x)$

2) Find the derivative of $g(x) = \left(\frac{2x-5}{3x^2+1}\right)^6$

- a) $g'(x) = \frac{12(2x-5)^5(-3x^2+15x+1)}{(3x^2+1)^7}$ b) $g'(x) = \frac{12(2x-5)^5(-3x^2+15x+1)}{(3x^2+1)^3}$
- c) $g'(x) = \frac{12(2x-5)^5(-6x^2+15x)}{(3x^2+1)^6}$

3) Find the derivative of $y = \frac{x}{\sqrt{7-4x}}$

a) $\frac{dy}{dx} = \frac{7-2x}{(7-4x)^{3/2}}$ b) $\frac{dy}{dx} = \frac{2x}{(7-4x)}$ c) $\frac{dy}{dx} = \frac{7-2x}{(7-4x)^2}$

4) Find the derivative of $y = (4x+1)(1-x)^3$

a) $-12(1-x)^2$ b) $(1-x)^2(1+8x)$ c) $(1-x)^2(1-16x)$
d) $3(1-x)^2(4x+1)$ e) $(1-x)^2(16x+7)$

5) Find the derivative of $y = \sqrt{3-2x}$

a) $\frac{1}{2\sqrt{3-2x}}$ b) $-\frac{1}{\sqrt{3-2x}}$ c) $-\frac{(3-2x)^{3/2}}{3}$
d) $-\frac{1}{3-2x}$ e) $\frac{2}{3}(3-2x)^{3/2}$