

§3.4: THE CHAIN RULE

1.] Differentiate the following functions:

a.) $f(x) = \tan(3x)$

b.) $f(x) = e^{3x}$

c.) $f(x) = (2x^2 - 3)^{49}$

d.) $f(x) = \sin^4(x)$

e.) $f(x) = \cos(\sqrt{x})$

f.) $f(x) = \sqrt{\cos(x)}$

2.] Differentiate the following functions:

a.) $h(x) = \sqrt{\tan(5x^2)}$

b.) $k(x) = \csc(4x^2)2^{\sec(x)}$

3.] Differentiate the following function: $f(x) = (\cos^4(7x^3) + 4 \sec(x))^6$.

4.] Find the equation of the tangent line to the graph of $f(x) = (x^2 + 3x + 4)^{2/3}$ at the point $(1, f(1))$.