

$$4) (x^2+2)^4 = f(x)$$

$$f'(x) = 4(x^2+2)^3 (2x) \\ = 8x(x^2+2)^3$$

$$5) f(x) = [\sin(x^2+2)]^3 = \sin^3(x^2+2)$$

$$3(\sin(x^2+2))^2 (\cos(x^2+2)) (2x)$$