3.6 The Chain Rule Day 2

Ex 1) Let $f(u) = u^3 + u$ Find $(f \circ g)'$

          $u = g(x) = 4x$

Ex 2) Given

          $f(1) = 2$ $f'(1) = 3$ $f'(2) = -4$

          $g(1) = 2$ $g'(1) = -3$ $g'(2) = 5$

If $h(x) = f(g(x))$

Find $h'(1)$

Ex 3) $x = 3\cos(2t)$

$y = 2\sin(3t)$

Find $\dfrac{dy}{dx}$ $t = \pi/3$

Ex 4) $x = 3t^2 + 2$

$y = t^3$

Find $\dfrac{dy}{dx}$ $t = 1$

1. $\dfrac{d}{dx}\ \sin^2(x^3)$

2. $f(x) = \sec(2x)$. Find $f\,'(\pi/6)$

3. Write an equation for the tangent to the graph of $y = x(1 - 2x)^2$ at $(1, 1)$

        A. $y=2x+1$ B. $y= -4x+5$

        C. $y = -2x - 2$ D. $y = 5x-4$

4. $y = (1 + \cos^2(7x))^3$