Tyeon Ford

For problems 1 – 27 differentiate th

1. $f(x) = \left(6x^2 + 7x\right)^4$ **[Solution]**

2. $g(t) = \left(4t^2 - 3t + 2\right)^{-2}$ **[Solution]**

3. $y = \sqrt[3]{1 - 8z}$ **[Solution]**

1. $f(x) = (6x^2+7x)^4$ Inner $6x^2+7x \to 12x+7$ Outer $(6x^2+7x)^4 \to 4(6x^2+7x)^3$

$f'(x) = (12x+7)\cdot 4(6x^2+7x)^3$

2. $g(t) = (4t^2-3t+2)^{-2}$ Inner $4t^2-3t+2 \to 8t-3$ Outer $(4t^2-3t+2)^{-2} \to -2(4t^2-3t+2)^{-3}$

$g'(t) = (8t-3)\cdot -2(4t^2-3t+2)^{-3}$

3. $y = \sqrt[3]{1-8z}$ Inner $1-8z \to -8$ Outer $\sqrt[3]{1-8z}$ $(1-8z)^{\frac{1}{3}} \to \frac{1}{3}(1-8z)^{-\frac{2}{3}}$

$y' = -8\cdot \frac{1}{3}(1-8z)^{-\frac{2}{3}}$