Mini-math Div 3/4: Wednesday, October 14, 2020 (20 minutes)

(1) Find y' if $y = \dfrac{20x^2 + 21}{x}$.

(2) Find y' if $y = \dfrac{x}{20x^2 + 21}$

(3) Find $\dfrac{df}{dt}$ if $f(t) = (t^2 + 1)\sqrt{t^2 - 1}$

(4) Find $\dfrac{df}{dg}$ if $f(g) = \sqrt{\sqrt{g + 1} + 1}$ and $g(x) = x^2 + 1$

(5) Find an equation of the line tangent to the curve

$$xy + 7 = x^3 + y^3$$

at the point $(2, 1)$.

(6) Find $\dfrac{d^2y}{dx^2}$ if $x + y^2 = 1$