

Math 1121

Hw #5

#1/5, 12/16, 28/32, 45/53a

#1/5

$$y = (3x^2 + 2)(2x - 1)$$

$$\frac{dy}{dx} = (3x^2 + 2) \cdot 2 + (2x - 1) \cdot 6x$$

#12/16

$$y = \frac{8x - 11}{7x + 3}$$

$$\frac{dy}{dx} = \frac{(7x + 3) \cdot 8 - (8x - 11) \cdot 7}{(7x + 3)^2}$$

#28/32

$$\frac{d}{dx} \frac{(2x^2 + 3)(5x + 2)}{6x - 7}$$

$$= \frac{(6x - 7) \cdot ((2x^2 + 3) \cdot 5 + (5x + 2) \cdot 4x) - (2x^2 + 3)(5x + 2) \cdot 6}{(6x - 7)^2}$$

#45/53a

$$M(d) = \frac{100d^2}{3d^2 + 10}$$

$$M'(d) = \frac{(3d^2 + 10) \cdot 200d - 100d^2 \cdot 6d}{(3d^2 + 10)^2}$$