

$$1. \quad y = 2x^3 - 6x^2 - 7x + 11$$

$$= \frac{d}{dx}(2x^3) - \frac{d}{dx}(6x^2) - \frac{d}{dx}(7x) + \frac{d}{dx}(11)$$

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

$$6x^2 - 12x - 7$$

$$2. \quad y = 11/4 x^3 + 7/3 x^2$$

$$11/4 \frac{d}{dx}(x^3) + 7/3 \frac{d}{dx}(x^2)$$

$$33/4 x^2 + 14/3 x$$

$$3. \quad y = 11 - 2x^2 - 6x^3$$

$$= \frac{d}{dx}(11) - \frac{d}{dx}(2x^2) - \frac{d}{dx}(6x^3)$$

$$2(x^2) - 18x^2$$

$$-16x^2$$

$$4. y = \frac{x}{(x^2 - 8x)} = \frac{x}{(x^2 - 8x)} \quad v$$

$$u = x \quad v = x^2 - 8x$$

$$du = 1 \quad dv = 2x - 8$$

$$(x) (2x - 8) = 2x^2 - 8x \quad (x^2 - 8x) (1) = x^2 - 8x$$

$$\frac{2x^2 - 8x + x^2 - 8x}{(x^2 - 8x)^2}$$

$$= \frac{3x^2 - 16x}{(x^2 - 8x)^2}$$

~~$$\frac{2x^2 - 8x}{(x^2 - 8x)^2} + \frac{x^2 - 8x}{(x^2 - 8x)^2}$$~~

$$5. y = 5/(3x - 4)$$

$$u = 5 \quad v = 3x - 4$$

$$du = 0 \quad dv = 3$$

~~$$(5)(3 - 4) = 15 - 20 = -5 \quad (3x - 4)(1)$$~~

~~$$(3x - 4)^2$$~~

$$\frac{-5}{(3x - 4)^2} = 5(3x - 4)^{-2} = -10(3x - 4)^{-3} \cdot (3)$$

$$= -30(3x - 4)^{-3} = \frac{-30}{(3x - 4)^3}$$

$$6. y = (3x+2)/(2x-1)$$

$$\frac{3x+2}{2x-1}$$

$$\frac{(2x-1)(3) - (3x+2)(2)}{(2x-1)^2}$$

$$u = 3x+2$$

$$du = 3$$

$$v = 2x-1$$

$$dv = 2$$

$$6x-3 - 6x-4$$

$$\frac{12x+1}{(2x-1)^2}$$

$$7. y = (3x^2+1)/(2x)$$

$$u = 3x^2+1$$

$$du = 6x$$

$$v = 2x$$

$$dv = 2$$

$$\frac{(3x^2+1)(2) - (2x)(6x)}{(2x)^2}$$

$$\frac{(2x)(6x) - (3x^2+1)(2)}{(2x)^2}$$

$$\frac{3x^2+1}{2x}$$

$$(2x)^2$$

$$\frac{12x^2 - 6x^2 + 3 - 2}{(2x)^2} = \frac{6x^2 + 1}{(2x)^2}$$

$$8. y = 5/(4+x^2)$$

$$y = \frac{5}{(4+x^2)} = -\left(\frac{5}{(4+x^2)^2}\right) \frac{(2x)}{1} = \frac{-10x}{(4+x^2)^2}$$