(2,3) slope at x=2 (2,1) slope at x=2

U) Suppose u and v are differentiable functions at x = 2 and
$\boxed{u(2) = 3}$, $\boxed{u'(2) = 3}$, $\boxed{v(2)=1}$, $\boxed{v'(2) = 2}$

i) Find $\frac{d}{dx}(uv)$ at $x = 2$

$$\frac{d}{dx}(u \cdot v) = u(2) \cdot v'(2) + v(2) \cdot u'(2)$$
$$= 3 \cdot 2 + 1 \cdot 3 = 9$$

ii) Find $\frac{d}{dx}\left(\frac{u}{v}\right)$

$$\frac{d}{dx}\left(\frac{u}{v}\right) = \frac{v(2) \cdot u'(2) - u(2) \cdot v'(2)}{[v(2)]^2} = \frac{1(3) - 3(2)}{1^2}$$

P. 126
#23

iii) Find $\frac{d}{dx}(3u - 2v + 2uv)$

$$\frac{d}{dx}(3u - 2v + 2[uv]) = 3u'(2) - 2v'(2) + 2[uv' + vu']$$
$$= 3(3) - 2(2) + 2[9]$$

V) Find the derivative of y = x with respect to x

W) Find the derivative of y = x with respect to t

X) Find the derivative of y = x with respect to P