

$$D x^n = n \cdot x^{n-1}$$



$n = 2, 3, 4, \dots$

$$D k = 0$$

$$D(k \cdot x) = \underline{k}$$

$$D(f(x) + g(x)) = D f(x) + D g(x)$$

$$D k \cdot f(x) = k \cdot D f(x) \quad \text{vakiin s\u00e4rt\u00f6s\u00e4nt\u00f6}$$

$k = \text{vakio}$

$$D(5x) =$$

$$D f'(x) \quad \frac{dy}{dx}$$

E1  $D(-2) = 0$

E2  $D(8x) = 8Dx = 8 \cdot 1 = 8$

E3  $D x^4 = 4 \cdot x^{4-1} = \underline{4x^3}$

E4  $D(-4x^5)$

$$= -4Dx^5$$

$$= -4 \cdot 5x^{5-1}$$

$$= \underline{-20x^4}$$

E5  $D(2x^6 - 9x^4 + 2)$

$$= D 2x^6 - D 9x^4 + D 2$$

$$= 2Dx^6 - 9Dx^4 + 0$$

$$= 2 \cdot 6x^{6-1} - 9 \cdot 4x^{4-1}$$

$$= \underline{\underline{12x^5 - 36x^3}}$$

$$D x^1 = 1x^{1-1} = 1 \cdot \underbrace{x^0}_{=1} = 1$$