

nr 2 p 117

$$\begin{aligned} e) D(\underbrace{\sin x}_f \underbrace{\cos x}_g) &= \cos x \cdot D \sin x + \sin x \cdot D \cos x \\ &= \cos x \cdot \cos x + \sin x \cdot (-\sin x) \\ &= \cos^2 x - \sin^2 x \\ &= \cos 2x \end{aligned}$$

formules verdubbeling gon.

$$\begin{aligned} f) D(\underbrace{\sin x + \cos x}_f \cdot \underbrace{\cos x - \sin x}_g) &= (\cos x - \sin x) \cdot D(\sin x + \cos x) + (\sin x + \cos x) \cdot D(\cos x - \sin x) \\ &= (\cos x - \sin x) (D \sin x + D \cos x) + (\sin x + \cos x) (D \cos x - D \sin x) \\ &= (\cos x - \sin x) (\cos x - \sin x) + (\sin x + \cos x) (-\sin x - \cos x) \\ &= (\cos x - \sin x)^2 - (\sin x + \cos x)^2 \\ &= \cos^2 x - 2 \cos x \cdot \sin x + \sin^2 x - (\sin^2 x + 2 \sin x \cos x + \cos^2 x) \\ &\quad \underbrace{\hspace{10em}}_{\substack{1 \\ \text{grand formule}}} \quad \underbrace{\hspace{10em}}_{\substack{1 \\ \text{}}} \\ &= \cancel{1} - 2 \cos x \cdot \sin x - \cancel{1} - 2 \cos x \sin x \\ &= -4 \sin x \cos x \\ &= -2 \cdot \underbrace{2 \sin x \cdot \cos x}_{= \sin 2x} \\ &= \boxed{-2 \sin 2x} \end{aligned}$$