

Def 6 p A.14

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

? vgl rkl aan  $f$  in  $x=2$

vgl:  $y - f(2) = f'(2)(x-2)$

\*  $f(2) = \frac{4^{\frac{3}{2}} \cdot (-1)^{\frac{2}{5}}}{(-1)^2} = \frac{8 \cdot 1}{1} = 8$

\*  $f'(2)$

$$f'(x) = f(x) \cdot \underbrace{(\ln f(x))'}_{\oplus}$$

$$\begin{aligned} \oplus &= \left( \frac{3}{2} \ln(6-x) + \frac{2}{5} \ln(x-3) - 2 \ln(x^2-4x+3) \right)' \\ &= \frac{3}{2} \frac{-1}{6-x} + \frac{2}{5} \frac{1}{x-3} - 2 \frac{2x-4}{x^2-4x+3} \end{aligned}$$

$$\begin{aligned} f'(2) &= f(2) \cdot (\ln f(x))'_{x=2} \\ &= 8 \cdot \left( \frac{3}{2} \cdot \frac{-1}{4} + \frac{2}{5} \cdot \frac{1}{-1} - 2 \cdot 0 \right) \\ &= -3 - \frac{16}{5} = -\frac{31}{5} \end{aligned}$$

$$\Rightarrow \text{vgl: } y - 8 = -\frac{31}{5}(x-2)$$

$$\begin{aligned} \Rightarrow y &= -\frac{31}{5}x + \frac{62}{5} + 8 \\ &= -\frac{31}{5}x + \frac{102}{5} \end{aligned}$$