

Oef 4 (b) f A.14

$$f_2(x) = \frac{(x^2+16)^{\frac{3}{2}} (32-x)^{\frac{1}{5}}}{(x-1)^{\frac{2}{5}} (x^2+3x+4)^{\frac{1}{2}}}$$

? vgl aan  $f_2$  in  $x=0$ vgl vgl in  $(x_0, f(x_0))$ :

$$y - f(x_0) = f'(x_0) (x - x_0)$$

$$x=0: y - f_2(0) = f_2'(0) x$$

$$*) f_2(0) = \frac{16^{\frac{3}{2}} \cdot 32^{\frac{1}{5}}}{(-1)^{\frac{2}{5}} 4^{\frac{1}{2}}} = \frac{64 \cdot 2}{2} = 64$$

\*  $f_2'(0)$ 

$$f_2'(x) = f_2(x) \left( \ln f_2(x) \right)'$$

$$\hookrightarrow = \left( \frac{3}{2} \ln(x^2+16) + \frac{1}{5} \ln(32-x) - \frac{2}{5} \ln(x-1) - \frac{1}{2} \ln(x^2+3x+4) \right)'$$

$$= \frac{3}{2} \frac{2x}{x^2+16} + \frac{1}{5} \frac{-1}{32-x} - \frac{2}{5} \frac{1}{x-1} - \frac{1}{2} \frac{2x+3}{x^2+3x+4}$$

$$f_2'(0) = f_2(0) \cdot \left( \ln f_2(x) \right)'_{x=0}$$

$$= 64 \left( \frac{3}{2} \cdot 0 - \frac{1}{5 \cdot 32} - \frac{2}{5} (-1) - \frac{1}{2} \frac{3}{4} \right)$$

$$= -\frac{2}{5} + \frac{128}{5} - 24 \quad \text{Rbl.}$$

$$= \frac{126}{5} - 24 = \frac{6}{5} \quad y = \frac{6}{5}x + 64$$