

Antwoorden:

1 $f(x) = 3e^{-x} - 4$

dan $f'(x) = -3e^{-x}$

2 $f(x) = \sqrt{1 - e^x}$

dan $f'(x) = \frac{1}{2} \cdot (1 - e^x)^{-\frac{1}{2}} \cdot -e^x$

3 $f(x) = {}^5 \log 3x$

dan $f'(x) = \frac{1}{\ln 5} \cdot \frac{1}{x}$

4 $f(x) = x \cdot e^{x^2}$

dan $f'(x) = e^{x^2} + 2x^2 e^{x^2}$

5 $f(x) = 3 \cdot 5^x$

dan $f'(x) = 3 \cdot \ln 5 \cdot 5^x$

6 $f(x) = \frac{1}{6 - x}$

dan $f'(x) = \frac{1}{(6 - x)^2}$

7 $f(x) = 5^x$

dan $f'(x) = \ln 5 \cdot 5^x$

8 $f(x) = \frac{x}{1 - e^x}$

dan $f'(x) = \frac{(1 - e^x) - x \cdot -e^x}{(1 - e^x)^2}$

9 $f(x) = 4x \cdot {}^2 \log 5x$

dan $f'(x) = 4 \cdot {}^2 \log 5x + 4x \cdot \frac{1}{\ln 2} \cdot \frac{1}{x}$

10 $f(x) = \frac{\ln x}{x}$

dan $f'(x) = \frac{1 - \ln x}{x^2}$

11 $f(x) = x^x$

dan $f'(x) = e^{\ln x + 1} = x \cdot e$

12 $f(x) = \sin 2x \cdot 4^x$

dan $f'(x) = 2 \cos 2x \cdot 4^x + \sin 2x \cdot \ln 4 \cdot 4^x$

13 $f(x) = (7x + 9) \cdot e^{-x}$

dan $f'(x) = (-1 \cdot (7x + 9) + 7) \cdot e^{-x}$

14 $f(x) = \frac{x}{6 - e^x}$

dan $f'(x) = \frac{(6 - e^x) - x \cdot -e^x}{(6 - e^x)^2}$

15 $f(x) = \sqrt{\ln 3x}$

dan $f'(x) = \frac{1}{2} (\ln 3x)^{-\frac{1}{2}} \cdot \frac{1}{x}$

16 $f(x) = 3 \cdot 8^x$

dan $f'(x) = 3 \cdot \ln 8 \cdot 8^x$

17 $f(x) = (3,8)^x$

dan $f'(x) = \ln(3,8) \cdot (3,8)^x$

18 $f(x) = {}^2 \log(3x^2 - x)$

dan $f'(x) = \frac{1}{\ln 2} \cdot \frac{1}{3x^2 - x} \cdot (6x - 1)$

19 $f(x) = \sqrt{2 - e^x}$

dan $f'(x) = \frac{1}{2} (2 - e^x)^{-\frac{1}{2}} \cdot -e^x$

20 $f(x) = (\cos 2x + \sin x) * e^x$ dan

$$f'(x) = (\cos 2x + \sin x - 2 \sin 2x + \cos x) * e^x$$