

Oefeningen niveau 2

Oefening 1. Bereken de afgeleide

1. $(e^{3x})' = 3e^{3x}$

2. $(e^{-2x})' = -2e^{-2x}$

3. $(e^{x^3})' = 3x^2 e^{x^3}$

4. $(xe^{x^2})' = e^{x^2}(1 + 2x^2)$

5. $(x^3 e^x)' = e^x x^2(3 + x)$

6. $(e^{3x+5})' = 3e^{3x+5}$

7. $(e^x + e^{-x})' = e^x - e^{-x}$

8. $(e^{\sin(2x)})' = 2 \cos(2x)e^{\sin(2x)}$

9. $(e^{\cos(3x)})' = -3 \sin(3x)e^{\cos(3x)}$

10. $(e^{x^4+x})' = (4x^3 + 1)e^{x^4+x}$

Oefening 2. Bereken de afgeleide

1. $(e^x \cdot e^x)' = 2e^x e^x$

2. $(e^{x+e^x})' = (1 + e^x)e^{x+e^x}$

3. $(xe^{x^3})' = e^{x^3}(1 + 3x^3)$

4. $(e^{x^2+4x})' = (2x + 4)e^{x^2+4x}$

5. $(xe^{2x})' = e^{2x}(1 + 2x)$

6. $(e^{\tan x})' = \sec^2 x \cdot e^{\tan x}$

7. $(e^{\ln x})' = \frac{1}{x} e^{\ln x}$

8. $(e^{x^3+x^2})' = (3x^2 + 2x)e^{x^3+x^2}$

9. $(x^2 e^{x^2})' = e^{x^2} x(2 + x^2)$

10. $(xe^{x+1})' = e^{x+1}(1 + x)$

Oefening 3. Bereken de afgeleide

1. $e^{\cos^2 x} = -2 \sin x \cos x e^{\cos^2 x}$

2. $e^{\sin^2 x} = 2 \sin x \cos x e^{\sin^2 x}$

3. $e^{x+e^x} = (1 + e^x)e^{x+e^x}$

4. $x^3 e^{x^2} = e^{x^2} x^2(3 + 2x^2)$

5. $e^{\tan^2 x} = 2 \tan x \sec^2 x e^{\tan^2 x}$

6. $xe^{x^4} = e^{x^4}(1 + 4x^4)$

7. $e^{\ln(x^2)} = \frac{2}{x} e^{\ln(x^2)}$

8. $e^{\cos(x^2)} = -2x \sin(x^2)e^{\cos(x^2)}$

9. $e^{x+e^{x^2}} = (1 + 2xe^{x^2})e^{x+e^{x^2}}$

10. $e^{\sin(x^3)} = 3x^2 \cos(x^3)e^{\sin(x^3)}$