

Verbetering toets Afgeleiden deel 2:

Bereken rechtstreeks de afgeleide van volgende functies:

a) $3x^3 + 5x + 1$

$$f'(x) = 3 \cdot 3x^{3-1} + 5 \cdot 1x^{1-1} + 1 \cdot 0x^{0-1}$$

$$f'(x) = 9x^2 + 5$$

b) $2x^{\frac{5}{3}} + 7$

$$f'(x) = 2 \cdot \frac{5}{3} x^{\frac{5}{3}-1} + 7 \cdot 0x^{0-1}$$

$$f'(x) = \frac{10}{3} x^{\frac{2}{3}}$$

c) $\frac{1}{3x}$

$$f(x) = \frac{1}{3} x^{-1}$$

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

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

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$$d) 3x^7 - 3x^5 + 90$$

$$f'(x) = 3 \cdot 7x^{7-1} - 3 \cdot 5x^{5-1} + 90 \cdot 0x^{0-1}$$

$$f'(x) = 21x^6 - 15x^4$$

$$e) 3x^{\frac{9}{4}} - 6$$

$$f'(x) = 3 \cdot \frac{9}{4} x^{\frac{9}{4}-1} - 6 \cdot 0x^{0-1}$$

$$f'(x) = \frac{27}{4} x^{\frac{5}{4}}$$

$$f) 3x^{-4} - 30$$

$$f'(x) = 3 \cdot -4x^{-4-1} - 30 \cdot 0x^{0-1}$$

$$f'(x) = -12x^{-5}$$

$$f'(x) = \frac{-12}{x^5}$$

$$g) \frac{1}{3x^4}$$



$$f(x) = \frac{x^{-4}}{3}$$

$$f'(x) = -4 \cdot \frac{x^{-4-1}}{3}$$

$$f'(x) = -4 \cdot \frac{x^{-5}}{3}$$

$$f'(x) = -\frac{4}{3x^5}$$

$$h) \frac{2}{x^{-2}}$$

$$f(x) = 2 \cdot x^2$$

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

$$f'(x) = 4x^1$$