Kjerneregelen

Oppgave 1

Finn f'(x) til følgende funksjoner:

a)
$$f(x) = (x^3 + 6x)^5$$

b)
$$f(x) = \sqrt{2x^2 + 5}$$

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$$f(x) = (x^3 + 6x)^5$$
 b) $f(x) = \sqrt{2x^2 + 5}$ c) $f(x) = \left(\frac{2x}{x^2 + 3}\right)^4$

d)
$$f(x) = (2x^4 + 9)^{3/2}$$

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

d)
$$f(x) = (2x^4 + 9)^{3/2}$$
 e) $f(x) = \frac{1}{\sqrt{1+x^2}}$ **f)** $f(x) = x^2 \cdot (x^2 + 2x)^3$

g)
$$f(x) = x^2 \cdot \sqrt{x^2 - 2x}$$

h)
$$f(x) = \frac{x^2}{(x^2 + x)^3}$$

g)
$$f(x) = x^2 \cdot \sqrt{x^2 - 2x}$$
 h) $f(x) = \frac{x^2}{(x^2 + x)^3}$ i) $f(x) = (x^2 + 1)^2 \cdot (x^3 + 1)^3$

Oppgave 2

Deriver funksjonene nedenfor.

a)
$$f(x) = \sqrt{(3x^2 + 2x)^4}$$

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$$f(x) = \sqrt{(3x^2 + 2x)^4}$$
 b) $f(x) = (x^3 + 3)^5 \cdot (x^2 + 3)^4$ c) $f(x) = \sqrt{x^2 + 1} \cdot x^2$

c)
$$f(x) = \sqrt{x^2 + 1} \cdot x^2$$

d)
$$f(x) = \frac{(2x+3x^2)^3}{x^2}$$
 e) $f(x) = \sqrt[3]{x^4-5}$ f) $f(x) = \frac{x^3}{\sqrt{x^4-1}}$

e)
$$f(x) = \sqrt[3]{x^4 - 5}$$

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