Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{\Delta y}{\Delta x} = \frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}}$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0 + \boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0+\boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = \frac{\frac{1\cdot g(x_0)}{g(x_0+\boldsymbol{h})\cdot g(x_0)} - \frac{1\cdot g(x_0+\boldsymbol{h})}{g(x_0)\cdot g(x_0+\boldsymbol{h})}}{\boldsymbol{h}}$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = \frac{\frac{g(x_0)-g(x_0+\boldsymbol{h})}{g(x_0+\boldsymbol{h})\cdot g(x_0)}}{\boldsymbol{h}} \qquad \frac{a}{b} : c = \frac{a}{b \cdot c}$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = \frac{g(x_0) - g(x_0 + \boldsymbol{h})}{h \cdot g(x_0 + \boldsymbol{h}) \cdot g(x_0)}$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = \frac{g(x_0) - g(x_0 + \boldsymbol{h})}{h} \cdot \frac{1}{g(x_0 + \boldsymbol{h}) \cdot g(x_0)}$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{-g(x_0) + g(x_0 + \boldsymbol{h})}{h} \cdot \frac{1}{g(x_0 + \boldsymbol{h}) \cdot g(x_0)}$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0 + \boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0 + \boldsymbol{h}) \cdot g(x_0)}$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0 + \boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0 + \boldsymbol{h}) \cdot g(x_0)}$$

Trin 3: Udregn grænseværdien

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0+\boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0+\boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0+\boldsymbol{h}) \cdot g(x_0)}$$

Trin 3: Udregn grænseværdien

$$\lim_{\boldsymbol{h}\to 0} -\frac{g(x_0+\boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0+\boldsymbol{h}) \cdot g(x_0)} =$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0+\boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0+\boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0+\boldsymbol{h}) \cdot g(x_0)}$$

Trin 3: Udregn grænseværdien

$$\lim_{\boldsymbol{h}\to 0} -\frac{g(x_0+\boldsymbol{h}) - g(x_0)}{h} \cdot \lim_{\boldsymbol{h}\to 0} \frac{1}{g(x_0+\boldsymbol{h}) \cdot g(x_0)} =$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0+\boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0+\boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0+\boldsymbol{h}) \cdot g(x_0)}$$

Trin 3: Udregn grænseværdien

$$-g'(x_0) \cdot \lim_{\boldsymbol{h}\to 0} \frac{1}{g(x_0+\boldsymbol{h}) \cdot g(x_0)} =$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0 + \boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0 + \boldsymbol{h}) \cdot g(x_0)}$$

Trin 3: Udregn grænseværdien

$$-g'(x_0) \cdot \frac{1}{g(x_0) \cdot g(x_0)} =$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0 + \boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0 + \boldsymbol{h}) \cdot g(x_0)}$$

Trin 3: Udregn grænseværdien

$$-g'(x_0) \cdot \frac{1}{g(x_0)^2} =$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0 + \boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0 + \boldsymbol{h}) \cdot g(x_0)}$$

Trin 3: Udregn grænseværdien

$$-\frac{g'(x_0)}{g(x_0)^2}$$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0+\boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0+\boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0+\boldsymbol{h}) \cdot g(x_0)}$$

Trin 3: Udregn grænseværdien

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

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0 + \boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0 + \boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0 + \boldsymbol{h}) \cdot g(x}$$

Trin 3: Udregn grænseværdien

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

f	f'	
$g + h$	$g' + h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
		(13)
		(14)
		(15)

Differentialkvotient for $f(x) = \frac{1}{g(x)}$

Differentialkvotient for $f(x) = \frac{1}{g(x)}$, hvor $g(x)$ er en differentiabel funktion der er forskellig fra 0.

Trin 1: Indsæt funktionen i differenskvotienten

$$\frac{f(x_0+\boldsymbol{h}) - f(x_0)}{\boldsymbol{h}} = \frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}}$$

Trin 2: Reducer differenskvotienten

$$\frac{\frac{1}{g(x_0+\boldsymbol{h})} - \frac{1}{g(x_0)}}{\boldsymbol{h}} = -\frac{g(x_0+\boldsymbol{h}) - g(x_0)}{h} \cdot \frac{1}{g(x_0+\boldsymbol{h}) \cdot g(x$$

Trin 3: Udregn grænseværdien

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

f	f'	
$g+h$	$g'+h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
$\frac{1}{g}$	$-\frac{g'}{g^2}$	(13)
		(14)
		(15)

Anvendelse af regneregler

Bestem f' for følgende funktioner.

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

f	f'	
$g+h$	$g'+h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
$\frac{1}{g}$	$-\frac{g'}{g^2}$	(13)
		(14)
		(15)

f	f'	
k	0	(1)
$k \cdot x$	k	(2)
x^n	$n \cdot x^{n-1}$	(3)
$\frac{1}{x}$	$-\frac{1}{x^2}$	(4)
$\sqrt{x}$	$\frac{1}{2\sqrt{x}}$	(5)
e^x	e^x	(6)
$e^{k\cdot x}$	$k \cdot e^{k\cdot x}$	(7)
$\ln(x)$	$\frac{1}{x}$	(8)
a^x	$a^x \cdot \ln(a)$	(9)

Anvendelse af regneregler

Bestem f' for følgende funktioner.

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

$$f(x) = \frac{1}{\ln(x)}$$

$$f(x) = \frac{1}{\sqrt{x}}$$

f	f'	
$g + h$	$g' + h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
$\frac{1}{g}$	$-\frac{g'}{g^2}$	(13)
		(14)

f	f'	
k	0	(1)
$k \cdot x$	k	(2)
x^n	$n \cdot x^{n-1}$	(3)
$\frac{1}{x}$	$-\frac{1}{x^2}$	(4)
$\sqrt{x}$	$\frac{1}{2\sqrt{x}}$	(5)
e^x	e^x	(6)
$e^{k \cdot x}$	$k \cdot e^{k \cdot x}$	(7)
$\ln(x)$	$\frac{1}{x}$	(8)
a^x	$a^x \cdot \ln(a)$	(9)

Anvendelse af regneregler

Bestem f' for følgende funktioner.

$$f(x) = \frac{1}{x^3} \Rightarrow f'(x) = \frac{3x^2}{x^6}$$

$$f(x) = \frac{1}{\ln(x)}$$

$$f(x) = \frac{1}{\sqrt{x}}$$

f	f'	
$g + h$	$g' + h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
$\frac{1}{g}$	$-\frac{g'}{g^2}$	(13)
		(14)

f	f'	
k	0	(1)
$k \cdot x$	k	(2)
x^n	$n \cdot x^{n-1}$	(3)
$\frac{1}{x}$	$-\frac{1}{x^2}$	(4)
$\sqrt{x}$	$\frac{1}{2\sqrt{x}}$	(5)
e^x	e^x	(6)
$e^{k \cdot x}$	$k \cdot e^{k \cdot x}$	(7)
$\ln(x)$	$\frac{1}{x}$	(8)
a^x	$a^x \cdot \ln(a)$	(9)

Anvendelse af regneregler

Bestem f' for følgende funktioner.

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

$$f(x) = \frac{1}{\ln(x)}$$

$$f(x) = \frac{1}{\sqrt{x}}$$

f	f'	
$g+h$	$g'+h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
$\frac{1}{g}$	$-\frac{g'}{g^2}$	(13)
		(14)
		(15)

f	f'	
k	0	(1)
$k \cdot x$	k	(2)
x^n	$n \cdot x^{n-1}$	(3)
$\frac{1}{x}$	$-\frac{1}{x^2}$	(4)
$\sqrt{x}$	$\frac{1}{2\sqrt{x}}$	(5)
e^x	e^x	(6)
$e^{k \cdot x}$	$k \cdot e^{k \cdot x}$	(7)
$\ln(x)$	$\frac{1}{x}$	(8)
a^x	$a^x \cdot \ln(a)$	(9)

Anvendelse af regneregler

Bestem f' for følgende funktioner.

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

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

$$f(x) = \frac{1}{\sqrt{x}}$$

f	f'	
$g+h$	$g'+h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
$\frac{1}{g}$	$-\frac{g'}{g^2}$	(13)
		(14)

f	f'	
k	0	(1)
$k \cdot x$	k	(2)
x^n	$n \cdot x^{n-1}$	(3)
$\frac{1}{x}$	$-\frac{1}{x^2}$	(4)
$\sqrt{x}$	$\frac{1}{2\sqrt{x}}$	(5)
e^x	e^x	(6)
$e^{k \cdot x}$	$k \cdot e^{k \cdot x}$	(7)
$\ln(x)$	$\frac{1}{x}$	(8)
a^x	$a^x \cdot \ln(a)$	(9)

Anvendelse af regneregler

Bestem f' for følgende funktioner.

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

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

$$f(x) = \frac{1}{\sqrt{x}}$$

f	f'	
$g + h$	$g' + h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
$\frac{1}{g}$	$-\frac{g'}{g^2}$	(13)
		(14)
		(15)

f	f'	
k	0	(1)
$k \cdot x$	k	(2)
x^n	$n \cdot x^{n-1}$	(3)
$\frac{1}{x}$	$-\frac{1}{x^2}$	(4)
$\sqrt{x}$	$\frac{1}{2\sqrt{x}}$	(5)
e^x	e^x	(6)
$e^{k \cdot x}$	$k \cdot e^{k \cdot x}$	(7)
$\ln(x)$	$\frac{1}{x}$	(8)
a^x	$a^x \cdot \ln(a)$	(9)

Anvendelse af regneregler

Bestem f' for følgende funktioner.

$$f(x) = \frac{1}{x^3} \Rightarrow f'(x) = \frac{3}{x^4}$$
$$f(x) = \frac{1}{\ln(x)} \Rightarrow f'(x) = -\frac{1}{x \cdot \ln(x)^2}$$
$$f(x) = \frac{1}{\sqrt{x}} \Rightarrow f'(x) = -\frac{\frac{1}{2\sqrt{x}}}{\sqrt{x}^2}$$

f	f'	
$g+h$	$g'+h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
$\frac{1}{g}$	$-\frac{g'}{g^2}$	(13)
		(14)

f	f'	
k	0	(1)
$k \cdot x$	k	(2)
x^n	$n \cdot x^{n-1}$	(3)
$\frac{1}{x}$	$-\frac{1}{x^2}$	(4)
$\sqrt{x}$	$\frac{1}{2\sqrt{x}}$	(5)
e^x	e^x	(6)
$e^{k \cdot x}$	$k \cdot e^{k \cdot x}$	(7)
$\ln(x)$	$\frac{1}{x}$	(8)
a^x	$a^x \cdot \ln(a)$	(9)

Anvendelse af regneregler

Bestem f' for følgende funktioner.

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

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

$$f(x) = \frac{1}{\sqrt{x}} \Rightarrow f'(x) = -\frac{\frac{1}{2\sqrt{x}}}{x}$$

f	f'	
$g + h$	$g' + h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
$\frac{1}{g}$	$-\frac{g'}{g^2}$	(13)
		(14)

f	f'	
k	0	(1)
$k \cdot x$	k	(2)
x^n	$n \cdot x^{n-1}$	(3)
$\frac{1}{x}$	$-\frac{1}{x^2}$	(4)
$\sqrt{x}$	$\frac{1}{2\sqrt{x}}$	(5)
e^x	e^x	(6)
$e^{k \cdot x}$	$k \cdot e^{k \cdot x}$	(7)
$\ln(x)$	$\frac{1}{x}$	(8)
a^x	$a^x \cdot \ln(a)$	(9)

Anvendelse af regneregler

Bestem f' for følgende funktioner.

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

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

$$f(x) = \frac{1}{\sqrt{x}} \Rightarrow f'(x) = -\frac{1}{2 \cdot x \cdot \sqrt{x}}$$

f	f'	
$g + h$	$g' + h'$	(10)
$k \cdot g(x)$	$k \cdot g'(x)$	(11)
$g \cdot h$	$g' \cdot h + g \cdot h'$	(12)
$\frac{1}{g}$	$-\frac{g'}{g^2}$	(13)
		(14)
		(15)

f	f'	
k	0	(1)
$k \cdot x$	k	(2)
x^n	$n \cdot x^{n-1}$	(3)
$\frac{1}{x}$	$-\frac{1}{x^2}$	(4)
$\sqrt{x}$	$\frac{1}{2\sqrt{x}}$	(5)
e^x	e^x	(6)
$e^{k \cdot x}$	$k \cdot e^{k \cdot x}$	(7)
$\ln(x)$	$\frac{1}{x}$	(8)
a^x	$a^x \cdot \ln(a)$	(9)