

Eksempel 1 Reducér udtrykket

$$\frac{x^3 \cdot y^2}{x^2}$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

$$(x^n)^m = x^{n \cdot m}$$

$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 1 Reducér udtrykket

$$\frac{x^3 \cdot y^2}{x^2}$$
$$\frac{x^3 \cdot y^2}{x^2} = x^{3-2} \cdot y^2$$

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$$x^n = \underbrace{x \cdot x \cdots x}_n$$

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Eksempel 1 Reducér udtrykket

$$\frac{x^3 \cdot y^2}{x^2}$$

$$\frac{x^3 \cdot y^2}{x^2} = x^{3-2} \cdot y^2$$

$$= x \cdot y^2$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

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$$x^n \cdot x^m = x^{n+m}$$

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$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 2 Reducér udtrykket

$$x^3 \cdot y \cdot x^4$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

$$(x^n)^m = x^{n \cdot m}$$

$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 2 Reducér udtrykket

$$x^3 \cdot y \cdot x^4$$

$$x^3 \cdot y \cdot x^4 = x^{3+4} \cdot y$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

$$(x^n)^m = x^{n \cdot m}$$

$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 2 Reducér udtrykket

$$x^3 \cdot y \cdot x^4$$

$$\begin{aligned} x^3 \cdot y \cdot x^4 &= x^{3+4} \cdot y \\ &= x^7 \cdot y \end{aligned}$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

$$(x^n)^m = x^{n \cdot m}$$

$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 3 Reducér udtrykket

$$(x^3 \cdot y)^2$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

$$(x^n)^m = x^{n \cdot m}$$

$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 3 Reducér udtrykket

$$(x^3 \cdot y)^2$$

$$(x^3 \cdot y)^2 = x^{3 \cdot 2} \cdot y^{1 \cdot 2}$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

$$(x^n)^m = x^{n \cdot m}$$

$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 3 Reducér udtrykket

$$(x^3 \cdot y)^2$$

$$\begin{aligned}(x^3 \cdot y)^2 &= x^{3 \cdot 2} \cdot y^{1 \cdot 2} \\ &= x^6 \cdot y^2\end{aligned}$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

$$(x^n)^m = x^{n \cdot m}$$

$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 4 Reducér udtrykket

$$\left(\frac{y^2}{x}\right)^3 \cdot x$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

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$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 4 Reducér udtrykket

$$\left(\frac{y^2}{x}\right)^3 \cdot x$$
$$\left(\frac{y^2}{x}\right)^3 \cdot x = \frac{y^{2 \cdot 3}}{x^3} \cdot x$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

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$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 4 Reducér udtrykket

$$\begin{aligned}\left(\frac{y^2}{x}\right)^3 \cdot x \\ \left(\frac{y^2}{x}\right)^3 \cdot x &= \frac{y^{2 \cdot 3}}{x^3} \cdot x \\ &= \frac{y^6}{x^3} \cdot x\end{aligned}$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

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$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 4 Reducér udtrykket

$$\begin{aligned}\left(\frac{y^2}{x}\right)^3 \cdot x \\ \left(\frac{y^2}{x}\right)^3 \cdot x &= \frac{y^{2 \cdot 3}}{x^3} \cdot x \\ &= \frac{y^6}{x^3} \cdot x \\ &= \frac{y^6 \cdot x}{x^3}\end{aligned}$$

Definitioner

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$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

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$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 4 Reducér udtrykket

$$\begin{aligned}\left(\frac{y^2}{x}\right)^3 \cdot x \\ \left(\frac{y^2}{x}\right)^3 \cdot x &= \frac{y^{2 \cdot 3}}{x^3} \cdot x \\ &= \frac{y^6}{x^3} \cdot x \\ &= \frac{y^6 \cdot x}{x^3} \\ &= y^6 \cdot x^{1-3}\end{aligned}$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

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$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

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$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

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$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 4 Reducér udtrykket

$$\begin{aligned}
 & \left(\frac{y^2}{x}\right)^3 \cdot x \\
 & \left(\frac{y^2}{x}\right)^3 \cdot x = \frac{y^{2 \cdot 3}}{x^3} \cdot x \\
 & = \frac{y^6}{x^3} \cdot x \\
 & = \frac{y^6 \cdot x}{x^3} \\
 & = y^6 \cdot x^{1-3} \\
 & = y^6 \cdot x^{-2}
 \end{aligned}$$

Definitioner

$$\begin{aligned}
 x^n &= \underbrace{x \cdot x \cdots x}_n \\
 x^0 &= 1 \\
 x^{\frac{m}{n}} &= \sqrt[n]{x^m} \\
 x^{-n} &= \frac{1}{x^n}
 \end{aligned}$$

Sætninger

$$\begin{aligned}
 x^n \cdot x^m &= x^{n+m} \\
 \frac{x^n}{x^m} &= x^{n-m} \\
 (x^n)^m &= x^{n \cdot m} \\
 (x \cdot y)^n &= x^n \cdot y^n \\
 \left(\frac{x}{y}\right)^n &= \frac{x^n}{y^n} \\
 x^{\frac{1}{n}} &= \sqrt[n]{x}
 \end{aligned}$$

Eksempel 5 Reducér udtrykket

$$\frac{x \cdot y^2 + x}{x^2}$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

$$(x^n)^m = x^{n \cdot m}$$

$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 5 Reducér udtrykket

$$\frac{x \cdot y^2 + x}{x^2}$$

$$\frac{x \cdot y^2 + x}{x^2} = \frac{x \cdot (y^2 + 1)}{x^2}$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

$$(x^n)^m = x^{n \cdot m}$$

$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 5 Reducér udtrykket

$$\frac{x \cdot y^2 + x}{x^2}$$

$$\frac{x \cdot y^2 + x}{x^2} = \frac{x \cdot (y^2 + 1)}{x^2}$$

$$= x^{1-2} \cdot (y^2 + 1)$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

$$x^{-n} = \frac{1}{x^n}$$

Sætninger

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

$$(x^n)^m = x^{n \cdot m}$$

$$(x \cdot y)^n = x^n \cdot y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 5 Reducér udtrykket

$$\frac{x \cdot y^2 + x}{x^2}$$

$$\frac{x \cdot y^2 + x}{x^2} = \frac{x \cdot (y^2 + 1)}{x^2}$$

$$= x^{1-2} \cdot (y^2 + 1)$$

$$= x^{-1} \cdot (y^2 + 1)$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

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$$x^n \cdot x^m = x^{n+m}$$

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$$x^{\frac{1}{n}} = \sqrt[n]{x}$$

Eksempel 5 Reducér udtrykket

$$\frac{x \cdot y^2 + x}{x^2}$$

$$\frac{x \cdot y^2 + x}{x^2} = \frac{x \cdot (y^2 + 1)}{x^2}$$

$$= x^{1-2} \cdot (y^2 + 1)$$

$$= x^{-1} \cdot (y^2 + 1)$$

$$= \frac{y^2 + 1}{x}$$

Definitioner

$$x^n = \underbrace{x \cdot x \cdots x}_n$$

$$x^0 = 1$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m}$$

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