

Solving Equations with Rational or Variable Exponents

Simplify the expression:

$$\frac{25^{2n} \cdot 5^{1-n}}{(125^n)^2}$$

Solve each equation:

$$8x = 4$$

$$8^x = 4$$

$$3^x = \frac{1}{9}$$

$$2^{3x-1} = 4^{x+2}$$

$$x^{\frac{3}{2}} = 8$$

$$(4^x)^{x+2} = 64$$

$$2^x \cdot 2^{x+1} = \frac{1}{16}$$

$$\frac{3}{9^x} = 243$$

TRY THESE !

Solve these exponential equations.

a $2^{x+1} = 4^{2x}$

b $3^{x+2} = 9^{2x-2}$

c $2^{x+1} = \left(\frac{1}{2}\right)^{2x}$

d $\left(\frac{1}{3}\right)^{x+2} = 3^{2x-2}$

e $\left(\frac{1}{3}\right)^{x+2} = 9^{2x-2}$

