Solving Exponential Equations

Your Turn:

$$5^{x^2-3x} = 25^{x-2}$$

STEPS:

1) Write each side with the same base
2) Compare exponents
3) Solve equation

Warm Up

1 Simplify the following... $(3x^5y^3)^2$

A $6x^{10}y^6$

B $9x^7y^5$

C $9x^{10}y^6$

D $3x^{10}y^6$

2 Simplify: $(5x^7y^{-2})(4x^{-9}y^5)$

A $\dfrac{9y^3}{x^2}$

B $\dfrac{20y^3}{x^2}$

C $20x^2y^3$

D $\dfrac{20x^2}{y^3}$

3 Evaluate the following...

$$(-2)^{-3} + \left(\frac{2}{3}\right)^{-2} - 4^0$$

A $\frac{19}{8}$

B $\frac{17}{8}$

C $\frac{11}{8}$

D $\frac{9}{8}$

4 Simplify the following: $\dfrac{\left(xy^3\right)^2\left(x^5y\right)}{\left(x^5y^8\right)}$

A $\dfrac{x}{y}$

B $\dfrac{x^2}{y}$

C $\dfrac{x^2}{y^2}$

D $\dfrac{x}{y^2}$

5 Arrange the expressions below in INCREASING value.

Increasing $4^{-1}, \left(\frac{1}{3}\right)^{-2}, 5^0, (1.5)^{-1}$

A $(1.5)^{-1}, 4^{-1}, 5^0, \left(\frac{1}{3}\right)^{-2}$

B $5^0, (1.5)^{-1}, 4^{-1}, \left(\frac{1}{3}\right)^{-2}$

C $4^{-1}, (1.5)^{-1}, 5^0, \left(\frac{1}{3}\right)^{-2}$

D $\left(\frac{1}{3}\right)^{-2}, 4^{-1}, (1.5)^{-1}, 5^0$

6 Expand and simplify the following... $2(5x-2)-3(2x-7)$

A $4x+17$

B $4x-11$

C $4x-25$

D $4x+5$

7 Multiply the following...

$$(8x-3y)(2x+5y)$$

A $16x^2+34xy+15y^2$

B $16x^2+46xy-15y^2$

C $16x^2+46xy+15y^2$

D $16x^2+34xy-15y^2$

8 Expand the following... $(3x-7y)^2$

A $9x^2+49y^2$

B $9x^2-21xy+49y^2$

C $6x^2-14y^2$

D $9x^2-42xy+49y^2$