

WRITING EXPRESSIONS IN THE FORM A^2



([more mathematical cats](#))

For this lesson, you'll need these exponent laws:

$$(xy)^m = x^m y^m$$

$$(x^m)^n = x^{mn}$$

You'll be using them 'backwards'—that is, from right-to-left.

That is, you'll be starting with an expression of the form $x^m y^m$, and rewriting it in the form $(xy)^m$.

Or, you'll be starting with an expression of the form x^{mn} , and rewriting it in the form $(x^m)^n$.

Here, you will practice writing expressions in the form A^2 .

Only whole number coefficients and exponents are used in this exercise.

(The whole numbers are: 0, 1, 2, 3, . . .)

EXAMPLES:

Question: Write 9 in the form A^2 .

Answer: $9 = 3^2$

Question: Write $9x^2$ in the form A^2 .

Answer: $9x^2 = 3^2 x^2 = (3x)^2$

Question: Write x^6 in the form A^2 .

Answer: $x^6 = x^{3 \cdot 2} = (x^3)^2$

Question: Write $16x^4$ in the form A^2 .

Answer: $16x^4 = 4^2 \cdot x^{2 \cdot 2} = 4^2 (x^2)^2 = (4x^2)^2$

Question: Write -16 in the form A^2 .

Answer: not possible; a negative number can't be a perfect square

Question: Write $16x^3$ in the form A^2 .

Answer: not possible using only whole numbers, since 3 isn't a multiple of 2