



Exponents in Algebra

The Math portion of the SAT exam is littered with a litany of questions with exponents. As the test taker, you need to be aware of how to effectively solve this kind of problem without wasting too much time.

Let's take a look at the problem below.

Problem:

If $3x - y = 12$, what is the value of $\frac{8^x}{2^y}$?

A) 2^{12}

B) 4^4

C) 8^2

D) The value cannot be determined from the information given.

To find the value of the given expression, let's first focus on the numerator. As the denominator is shown with a base of 2, let's simplify the numerator to a base of 2 as well:

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

Now, we have $\frac{2^{3x}}{2^y}$ which we can express using the quotient rule as:

$$2^{3x-y}$$

Because we know that $3x - y = 12$, we can determine the answer to be 2^{12} , or A.