Topic: Negative exponents and product rule

Question: Write the expression with no negative exponents.

$$\frac{1}{x^{-2}}$$

Answer choices:

A $\frac{1}{-2x^2}$

B 0

C $-\frac{1}{x^2}$

D x^2

Solution: D

In order to get rid of the negative exponent, we change the exponent in x^{-2} from -2 to 2 and move the resulting expression from the denominator to the numerator.

$$\frac{1}{x^{-2}}$$

$$1 \cdot x^2$$

Since $1 \cdot x^2 = x^2$, this can be written as

$$x^2$$

Topic: Negative exponents and product rule

Question: Simplify the expression.

$$\frac{x^2}{x^{-3}}$$

Answer choices:

A x^5

B x^{-1}

C x^{-5}

D x^6

Solution: A

In order to get rid of the negative exponent, we change the exponent in x^{-3} from -3 to 3 and move the resulting expression from the denominator to the numerator.

$$\frac{x^2}{x^{-3}}$$

$$x^2 \cdot x^3$$

Now, since we have like bases, we add the exponents.

$$x^{2+3}$$

$$x^5$$

Topic: Negative exponents and product rule

Question: Simplify the expression.

$$\frac{b^3c^{-2}}{a^{-2}}$$

Answer choices:

A $a^2b^3c^2$

B $a^{-2}b^3c^{-2}$

C $\frac{b^3}{a^2c^2}$

D $\frac{a^2b^3}{c^2}$

Solution: D

First, we'll deal with the negative exponents. Remember that

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

and

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

First we'll move the a term, which has a negative exponent.

$$\frac{b^3c^{-2}}{a^{-2}}$$

$$\frac{a^2b^3c^{-2}}{1}$$

Then we'll move the c term, which also has a negative exponent.

$$\frac{a^2b^3}{1c^2}$$

$$\frac{a^2b^3}{c^2}$$