#7: Negative Law of Exponents: ***If the base is powered by the negative exponent, then the base becomes reciprocal with the positive exponent.***

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

So, when I have a Negative Exponent, I switch the base to its reciprocal with a Positive Exponent.
~~Ha Ha!~~
If the base with the negative exponent is in the denominator, it moves to the numerator to lose its negative sign!

$$\frac{5^{-3}}{1} = \frac{1}{5^3} = \frac{1}{125}$$

and

$$\frac{1}{3^{-2}} = 3^2 = 9$$

#8: Zero Law of Exponents: ***Any base powered by zero exponent equals one.***

$$x^0 = 1$$

So zero factors of a base equals 1.
That makes sense!
Every power has a coefficient of 1.

$$5^0 = 1$$
and
$$a^0 = 1$$
and
$$(5a)^0 = 1$$

Try these:

1. $(2a^2b)^0 = 1$
2. $y^2 \cdot y^{-4} = y^{2-4} \to y^{-2} \to \frac{1}{y^2}$
3. $(a^5)^{-1} = a^{-5} \to \frac{1}{a^5}$
4. $s^{-2} \cdot 4s^7 = \frac{4s^7}{s^2} \to 4s^{7-2} \to 4s^5$
5. $(3x^{-2}y^3)^{-4} = 3^{-4}x^8y^{-12} \to \frac{x^8}{3^4y^{12}} \to \frac{x^8}{81y^{12}}$
6. $(s^2t^4)^0 = 1$
7. $\left(\frac{2^2}{x}\right)^{-1} = \left(\frac{4^1}{x^1}\right)^{-1} \to \frac{4^{-1}}{x^{-1}}$
8. $\left(\frac{3^9}{3^5}\right)^{-2} = \left(3^4\right)^{-2} = 3^{-8} = \frac{1}{3^8}$
9. $\left(\frac{s^2t^2}{s^4t^4}\right)^{-2} = \left(\frac{1}{s^2t^2}\right)^{-2}$
10. $\left(\frac{36a^5}{4a^4b^5}\right)^{-2} = \frac{1^{-2}}{9^{-1}a^{-4}b^{-4}} \to \frac{9a^4b^4}{1}$