Exponential functions - represented by the following equation:

$$f(x) = ab^x$$

where $a \neq 0$, $b > 0$, $b \neq 1$

Exponent review:

Anything raised to the zero power is always one

5^0 → 1

$(3x^2y)^0$ → 1

$3x^0$ → $3(1)$ → 3

Negative exponents - when working with negative exponents, we take the reciprocal of the base and change the exponent to a positive

5^{-3} → $\left(\frac{1}{5}\right)^3$ → $\frac{1^3}{5^3}$ → $\frac{1}{125}$

$\left(\frac{3}{2}\right)^{-2}$ → $\left(\frac{2}{3}\right)^2$ → $\frac{2^2}{3^2}$ → $\frac{2}{3}\cdot\frac{2}{3}$ → $\frac{4}{9}$

$\left(\frac{5}{7}\right)^{-2}$ → $\left(\frac{7}{5}\right)^2$ → $\frac{7^2}{5^2}$ → 49