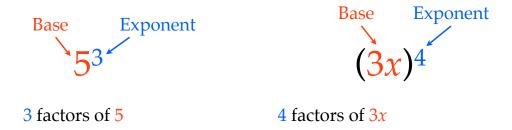
Power Expression

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Base Exponent
$$(x + 3)^2$$
 $5(3x - 4)^2$

2 factors of x + 3

5 times 2 factors of 3x - 4

Properties of Exponents

Zero Exponent Property

Any number (not equal to 0) raised to 0 power is equal to 1

$$a^{0}$$

Negative Exponent Property

Any number (not equal to 0) raised to a negative power is equal to the reciprocal of the base raised to the positive power.

$$5^{-2}$$
 a^{-m}

$$\frac{1}{a^{-n}}$$
 $\frac{1}{a^{-n}}$

Properties of Exponents

Product of Powers Property

Quotient of Powers Property

When multiplying like bases, add exponents

When dividing like bases, subtract exponents

$$2^3 \cdot 2^4$$

$$a^m \cdot a^n$$

$$\frac{4^6}{4^3}$$

$$\frac{a^m}{a^n}$$

Properties of Exponents

Power of a Power Property

When raising a power to power, multiply exponents

$$(3^2)^4$$

$$(a^m)^n$$

Properties of Exponents

Power of a Product Property

When raising a product to a power, apply the exponent to each factor

$$(2\cdot 3)^4 \qquad (ab)^m$$

Power of a Quotient Property

When raising a quotient (fraction) to a power, apply the exponent to numerator and denominator

$$\left(\frac{3}{4}\right)^2$$
 $\left(\frac{a}{b}\right)^n$