2.5 Exponent Laws II

* Understand and apply exponent laws for powers of : products, quotients and powers.

**Power of a Power**

A power indicates repeated multiplication. What is the standard form of ? This is called a power of a power. It looks like this when you break it down:

This pattern can be repeated using any integer. Again we can shortcut this because it is a Law.

**Exponent Law for Power of a Power**

**To raise a power to a power, multiply the exponents**

**=**

**Example #1**

1. b) c)

**Power of a Product**

The base of a power may be a product: for example,

is a power of a product. It means

Which means:

Which means: (

Which can be written:

**Exponent Law for a Power of Product**

**Example #2**

1. b)

**Power of a Quotient**

The base of a power may be written as a quotient: for example,

**Exponent Law for a Power of a Quotient**

Example #3

1. b)

Now try with Order of Operations: