

Example

$$4^0 = 1$$

So why does

$$a^0 = 1$$

A Very Informal Proof

Note:

$$\frac{u}{u} = 1, \text{ and Let } u = a^n$$

By using substitution and using Quotient of Powers Property of Exponents

$$1 = \frac{a^n}{a^n} = a^{n-n} = a^0$$

Therefore

$$a^0 = 1 \text{ or } 1 = a^0$$