**O level Mathematics by Anon**

**Indices**

We can represent as.

Similarly we say is.

Note: Any number which has an index of zero is 1 e.g. ()

**What are they called?**

Index (plural indices)

Base

We can say the above number as “ 7 raised to the power 5”, or to be general, we say to be“ a to the power n”

**Multiplication Law of Indices:**

When two numerical with the same base multiply, their powers are added:

Example: (2 + 3 = 5)

Proof:

In general we can say that:

**Division Law of Indices:**

When two numerical with same base divide, their power is subtracted

Example: (5 – 3 = 2)

Proof:

So in general we can say that:

**Power law of Indices:**

When a numerical is multiplied by a power, the existing and multiplying power multiply while base remains the same.

Example:

Proof:

In general we can say that:

**Other Laws of Indices:**

When two numerical with different bases but same power divide or multiply, the bases can multiply or divide taking the power as whole.

Example:

Similarly:

Proof:

While:

So in general we can say that: