GRADE 12 ESSENTIAL
UNIT X
ADDING, MULTIPLYING AND EXPONENTS

Name:_____
Date: _____

Calculate:
3 + 3 + 3 + 3 + 3 + 3 = _____   The result of adding is called a **sum**.

How many '3's were added together? _____

        We use **multiplying** to do **repeated adding**!

3 * *6* means you had three added *six* times

Calculate 3 * 5:   **3 * 6 =** _____
The result of multiplying is called a **product**

Try most of these manually;) no calculator!

Calculate 57 + 57 + 57 + 57 + 57 +57 + 57 + 57 by using the addition operation
The **sum** of 57 + 57 + 57 + 57 + 57 +57 + 57 + 57 = _____

Now calculate 57 * 8 ;
The **product** of 57 * 8 = _____

See how multiplying is really just repeated adding? Circle one: **Y / N**

        FYI: Amounts being added together are called **terms**

Calculate 46.53 + 46.53 + 46.53 + 46.53 by adding.
The **sum** of 46.53 + 46.53 + 46.53 + 46.53 = _____
Calculate 46.53 * 4;

The **product** of 46.53 * 4 = _____

FYI: The amounts being multiplied together are called **factors**.

So you know how to add and you know how to use multiplying when you add the same amount multiple times repeatedly!   Circle one: **Y / N**

You write an example of the **sum** of six of the same **term** and calculate it.

Show below how to calculate your example by multiplying two factors to get an equivalent product.
[Ideally you could all these without a calculator since you know your multiplication tables]

POWERS AND EXPONENTS

So multiplying is repeated adding!   Well, **Exponents** are used for **repeated multiplying**!

Calculate: **4 * 4 * 4 * 4 * 4 * 4 * 4 * 4**
The product of those factors is: _____

An easier way to write 4 * 4 * 4 * 4 * 4 * 4 * 4 * 4 is to say we have Factors of 4 multiplied together 8 times; or 4^8. The little '8' squirted in the corner is called an **exponent**. The full expression 4^8 is called a **power.**

Try 4^8 on your calculator! On some calculators it is a y^x button. On some calculators it is a   ^   button

4^8 = _____

Calculate using the indicated operation: try without a calculator even (?)

3+3+3+3+3+3 =	3 * 6 =
23.2 + 23.2 + 23.2 + 23.2 =	23.2 * 4 =
5 * 5 * 5 * 5 =	5^4=
17.6 * 17.6 * 17.6 =	$(17.6)^3$ =