Multiplication:

Multiplication is just another way of adding a string of numbers that are all the same.

4 x 3, for example, means take 4 *threes* and add them together.

In other words, (4 x 3) = 4 *threes* = 3 + 3 + 3 + 3.

Once you know your multiplication facts, multiplying is much faster and easier than adding. If you know that 4 x 3 = 12, you save the time and trouble that it would take to add the 4 threes together.

5+5+5 = _____ fives = _____ x 5 = _____

10+10+10+10 = _____ tens = _____ x 10 = _____

100+100 = _____ hundreds = _____ x 100 = _____

10 hundreds = _____ tens   100 tens = _____ thousand

4 x 3 = (3 x 3) + _____   237 x 9 = (236 x 9) + _____

7 tens = 5 tens + _____tens   237 nines = 236 nines + _____ nine

Expressions:

Numbers (0,1,2,3 . . .) tell how much or how many you have of something. Numbers (can be represented as points on a number line. They are easily compared.

Expressions tell you what to do with some numbers (e.g. multiply them, add them, etc.); they tell you to do a calculation. The **value** of the expression is what you get after you're done calculating.

The expression *6 tens* tells you to take 6 tens and add them together—in other words to multiply 10 by 6.

The value of 6 tens is the *number* you get after you've done the multiplication (or addition). The **value** of 6 tens is **60**.

When you are asked to compare two expressions (or an expression and a number) it may help to calculate the expression(s) first.

Example:

Let's say I have the number **2**,4<u>2</u>9, and I want to compare the value of the bold **2** to the value of the underlined <u>2</u>.

The bold **2** stands for 2 thousands.	The underlined <u>2</u> stands for 2 tens.
2 thousands means 2 x 1,000.	*2 tens* means 2 x 10.
The value of 2 x 1,000 = 2000.	The value of 2 x 10 = 20.

2,000 = *100* x 20, so the value of the bold **2** is 100 times the value of the underlined <u>2</u>.

Another way to arrive at the same answer is to remember that you multiply *value* of a digit by 10 each time you move it one place to the left. The bold **2** is two places to the left of the underlined <u>2</u>, so the value of the bold **2** must be 100 times the value of the underlined <u>2</u>.

The value of the 5 in 589 is _____times the value of the 5 in 805.

The value of the 1 in 1,869 is _____ times the value of the 1 in 310.

The value of the 3 in 386 is _____ times the value of the 3 in 993.

The value of a 7 in the *hundreds* place is _____ times the value of a 7 in the *tens* place.

The value of a 4 in the *thousands* place is _____times the value of a 4 in the tens place.