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Maths Tips and Tricks to Improve Your Math Abilities

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Multiplying by 11 shortcut

This technique teaches you how to multiply any number by eleven, easily and quickly. We will take a few examples and from these you will see the pattern used and also how easy they are to do.

So, to begin let's try 12 time 11.

First things first you will ignore the 11 for the moment and concentrate on the 12.

Split the twelve apart, like so:

$$1 \longleftrightarrow 2$$

Add these two digits together $1 + 2 = 3$

$$1+2 = 3$$

Place the answer, 3 in between the 12 to give 132

$$11 \times 12 = 132$$

Let's try another:

48 X 11

again, leave the 11 alone for a moment and work with the 48

$$4 + 8 = 12$$

So now we have to put the 12 in between the 4 and 8 but **don't** do this:
4128 as that is **wrong**...

First, do this: Place the 2 from the twelve in between the 4 and 8 giving 428.

Now we need to input the 1 from the twelve into our answer also, and to do this just add the one from 12 to the 4 of 428 giving 528!

Ok, one more

74 X 11

$$7+4 = 11$$

7 (put the 1 from the right of 11 in) and 4
then add the 1 from the left of 11 to the 7

74 X 11 = 814

This is a really simple method and will save you so much time with your 11 times tables.

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Is it divisible by four?

This little math trick will show you whether a number is divisible by four or not.

So, this is how it works.

Let's look at 1234

Does 4 divide evenly into 1234?

For 4 to divide into any number we have to make sure that the last number is even.

If it is an odd number, there is no way it will go in evenly.
So, for example, 4 will not go evenly into 1233 or 1235

now we know that for 4 to divide evenly into any number the number has to end with an even number.

Back to the question...

4 into 1234, the solution:

Take the last number and add it to 2 times the second last number. If 4 goes evenly into this number then you know that 4 will go evenly into the whole number.

So

$$4 + (2 \times 3) = 10$$

4 goes into 10 two times with a remainder of 2 so it does not go in evenly.

Therefore 4 into 1234 does not go in completely.

Let's try 4 into 3436546

So, from our example, take the last number, 6 and add it to two times the penultimate number, 4

$$6 + (2 \times 4) = 14$$

4 goes into 14 three times with two remainder.

So it doesn't go in evenly.

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Let's try one more.

4 into 212334436

$$6 + (2 \times 3) = 12$$

4 goes into 12 three times with 0 remainder.

Therefore 4 goes into 234436 evenly.

So what use is this trick to you?

Well if you have learnt the tutorial at Memorymentor.com about telling the day in any year, then you can use it in working out whether the year you are calculating is a leap year or not.

Multiplying by 12 shortcut

So how does the 12's shortcut work?

Let's take a look.

$$12 \times 7$$

the first thing is to always multiply the 1 of the twelve by the number we are multiplying by, in this case 7. So $1 \times 7 = 7$.

Multiply this 7 by 10 giving 70. (Why? We are working with BASES here. Bases are the fundamentals to easy calculations for all multiplication tables. To find out more check out our Vedic Maths ebook at http://www.memorymentor.com/big_brain.htm)

Now multiply the 7 by the 2 of twelve giving 14. Add this to 70 giving 84.

$$\text{Therefore } 7 \times 12 = 84$$

Let's try another:

$$17 \times 12$$

Remember, multiply the 17 by the 1 in 12 and multiply by 10
(Just add a zero to the end):

$$1 \times 17 = 17, \text{ multiplied by } 10 \text{ giving } 170.$$

Multiply 17 by 2 giving 34.

Add 34 to 170 giving 204.

$$\text{So } 17 \times 12 = 204$$

lets go one more

$$24 \times 12$$

Multiply $24 \times 1 = 24$. Multiply by 10 giving 240.

Multiply 24 by 2 = 48. Add to 240 giving us 288

$$24 \times 12 = 288 \text{ (these are Seriously Simple Sums to do aren't they?!)}$$

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Converting Kilos to pounds

In this section you will learn how to convert Kilos to Pounds, and Vice Versa.

Let's start off with looking at converting Kilos to pounds. 86 kilos into pounds:

Step one, multiply the kilos by TWO.

To do this, just double the kilos.

$$86 \times 2 = 172$$

Step two, divide the answer by ten.

To do this, just put a decimal point one place in from the right.

$$172 / 10 = 17.2$$

Step three, add step two's answer to step one's answer.

$$172 + 17.2 = 189.2$$

86 Kilos = 189.2 pounds

Let's try:

50 Kilos to pounds:

Step one, multiply the kilos by TWO.

To do this, just double the kilos.

$$50 \times 2 = 100$$

Step two, divide the answer by ten.

To do this, just put a decimal point one place in from the right.

$$100 / 10 = 10$$

Step three, add step two's answer to step one's answer.

$$100 + 10 = 110$$

50 Kilos = 110 pounds

Adding Time

Here is a nice simple way to add hours and minutes together:

Let's add 1 hr and 35 minutes and 3 hr 55 minutes together.

What you do is this:

make the 1 hr 35 minutes into one number, which will give us 135 and do the same for the other number, 3 hours 55 minutes, giving us 355

Now you want to add these two numbers together:

$$\begin{array}{r} 135 \\ 355 \\ \hline 490 \end{array}$$

So we now have a sub total of 490.

What you need to do to this and all sub totals is **add the time constant of 40**.

No matter what the hours and minutes are, just add the 40 time constant to the sub total.

$$490 + 40 = 530$$

so we can now see our answer is 5 hrs and 30 minutes!

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