

Sums. The're Math Magic

9 - Sum Handy Multiplication

Please go through each slide stopping until you have understood the concept described

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Can you multiply two number between 6 and 10 just using your hands?



Here is how to do just that.

First allocate number to your fingers and thumbs

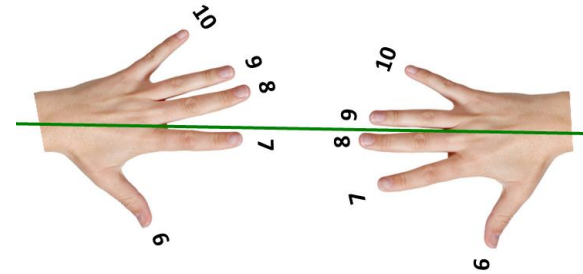


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Now lets try 7×8

Point the 7 on one hand to the 8 on the other and draw an imaginary line just above them.



How many digits are below the line = 5

This is the number of tens = 50

Multiply the digits above the line = $3 \times 2 = 6$

Add these results = $50 + 6 = 56 = 7 \times 8$

But can you prove it?

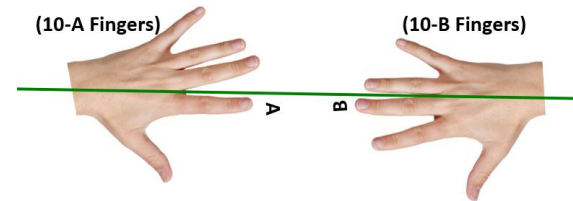
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But can you prove it?

Using $A \times B$

Point fingers A and B together



Above the line are $10-A$ fingers and $10-B$ fingers

Under the line are $5 - (10-A)$ fingers and $5 - (10-B)$ fingers

Add those under the line = $5 - 10 + A + 5 - 10 + B = A+B-10$

So $A+B-10$ is our tens figure so multiply by 10 = $10A+10B-100$

Under the line the sum is $10A+10B-100$

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Under the line the sum is $10A+10B-100$

Above the line we multiply = $(10-A) \times (10-B) = 100-10A-10B+AB$

Adding these

$$10A+10B-100$$

$$100-10A-10B+AB$$

$$100-100+10A-10A+10B-10B+AB$$

Equals

AB



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Please go to the next lesson.

Geometric Sums