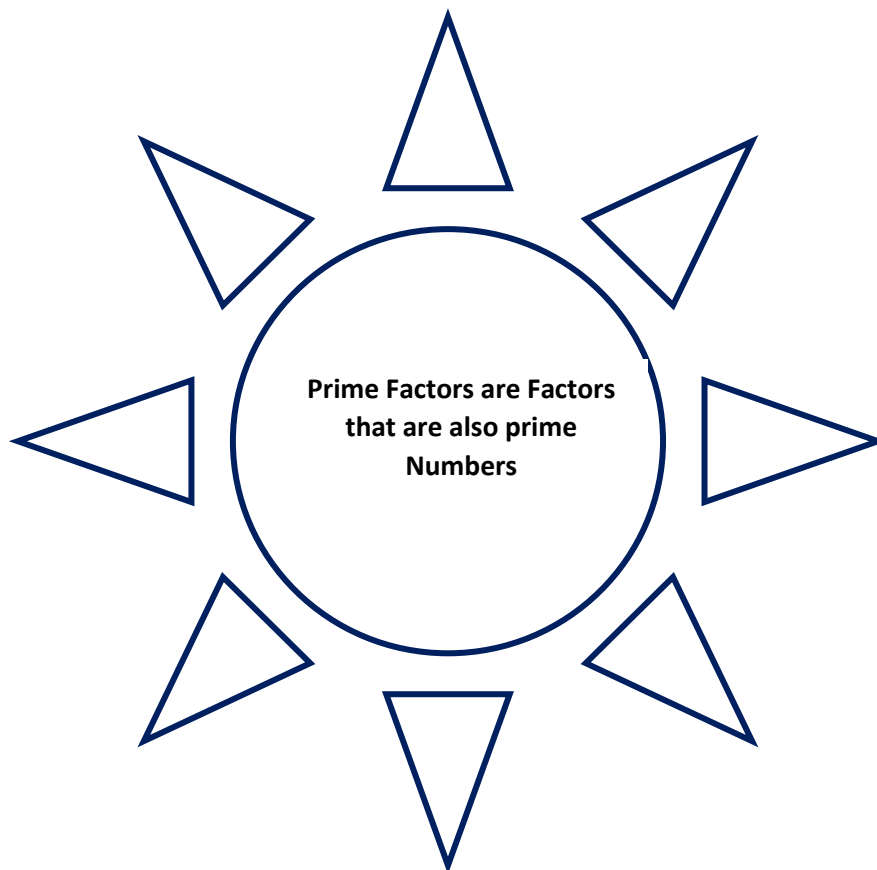


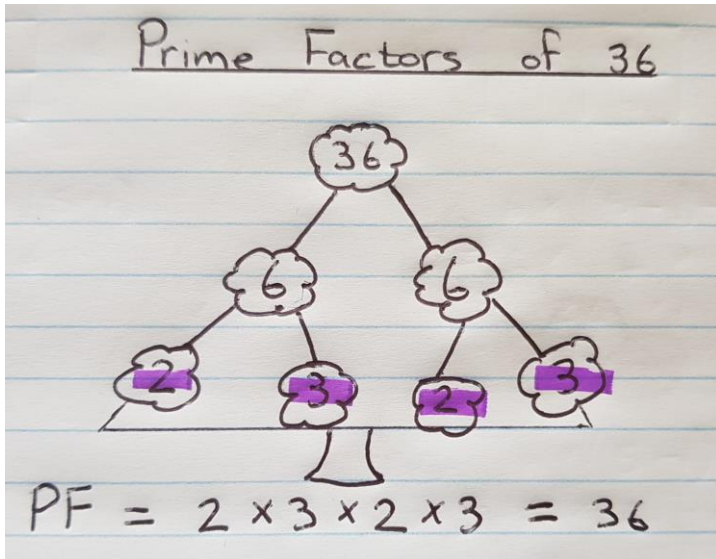
Steps and Examples

Prime Factors:



I like to use the **Prime Factor Tree**:

When finding Prime Factors there **are different ways in finding the answer**. We only need to use one factor pair:



In this example we find the Prime Factors of 36:

I ask myself: "What x What will give me 36?"

In this case I used 6x6.

Now we have to break it down further.

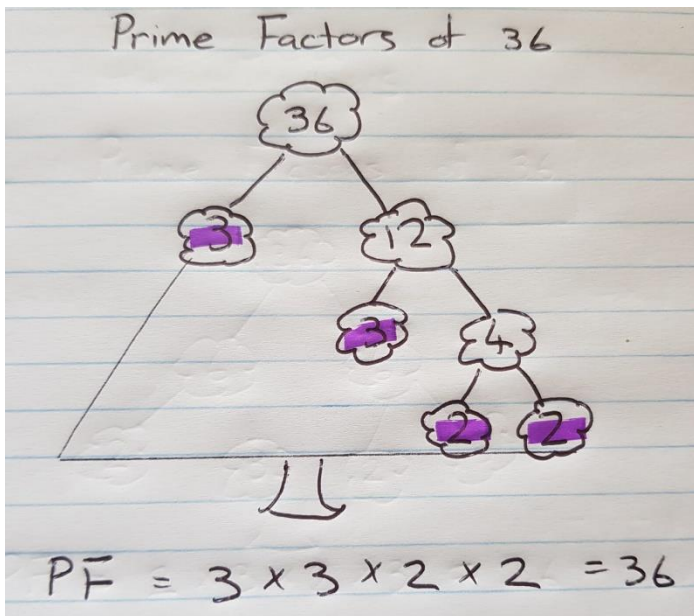
I ask myself: "What x What will give me 6?"

2 x 3

I repeat it on the other side as well.

The aim is to only have prime numbers at the bottom of your tree. Once you only have prime numbers you are done.

So, the Prime Factors are all the Prime numbers at the bottom of your tree.



In this example we find the Prime Factors of 36:

I ask myself: "What x What will give me 36?"

In this case I used 3 x 12.

Now we have to break it down further.

3 is already a prime number, so you leave it as it is.

I ask myself: "What x What will give me 12?"

3 x 4

3 is already a prime number, so you leave it as it is.

Now we have to break the 4 down further.

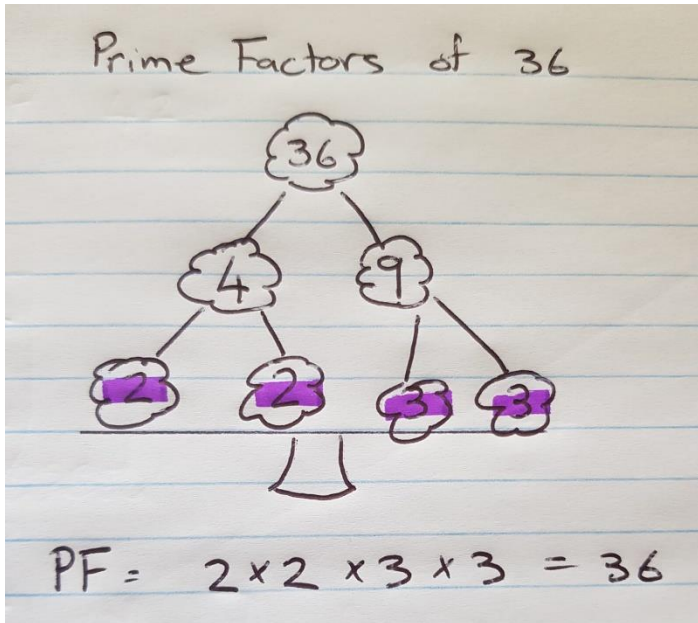
I ask myself: "What x What will give me 4?"

2 x 2

The aim is to only have prime numbers at the bottom of your tree. Once you only have prime numbers you are done.

So, the Prime Factors are all the Prime numbers at the bottom of your tree.





In this example we find the Prime Factors of 36:

I ask myself: "What x What will give me 36?"

In this case I used 4×9 .

Now we have to break the 4 down further.

I ask myself: "What x What will give me 4?"

2×2

Now we have to break the 9 down further.

I ask myself: "What x What will give me 9?"

3×3

The aim is to only have prime numbers at the bottom of your tree. Once you only have prime numbers you are done.

So, the Prime Factors are all the Prime numbers at the bottom of your tree.

All three examples are finding Prime Factors of 36: They all come down to the same answer, just in different orders.

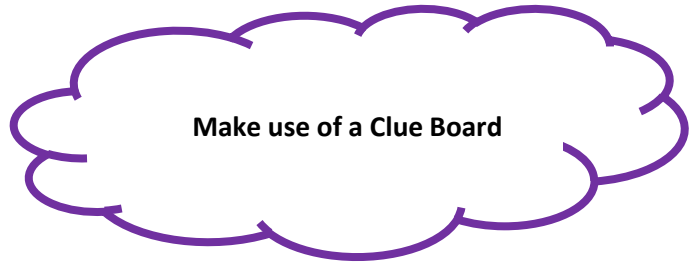
This means there is more than one way to find the correct answer.

Division

Division - Method 1

Example 1: $4\ 608 \div 24$

$$\begin{array}{r}
 192 \\
 24 \overline{) 4\ 608} \\
 \underline{- 2\ 400} \quad (24 \times 100) \\
 2\ 208 \\
 \underline{- 2\ 160} \quad (24 \times 90) \\
 48 \\
 \underline{- 48} \quad (24 \times 2) \\
 0 \quad \text{(No remainder)}
 \end{array}$$



CLUE BOARD

* We multiply with the number we are dividing with. In this case 24

Start with your **Thousands**

$$24 \times 1\ 000 = 24\ 000$$

(We only have 4 608 - we can't use the 24 000, because it is more than we have)

Go to your **Hundreds**

$$24 \times 100 = 2\ 400$$

$$24 \times 200 = 4\ 800$$

(We can't use the 4 800, because it is more than we have, so we will use

$$24 \times 100 = 2\ 400$$

Go to your **Tens**

$$24 \times 10 = 240$$

$$24 \times 20 = 480$$

$$24 \times 30 = 720$$

$$24 \times 40 = 960$$

$$24 \times 50 = 1\ 200$$

$$24 \times 60 = 1\ 440$$

$$24 \times 70 = 1\ 680$$

$$24 \times 80 = 1\ 920$$

$$24 \times 90 = 2\ 160$$

Go to your **Units**

$$24 \times 1 = 24$$

$$24 \times 2 = 48$$

Because division is the inverse (opposite) of Multiplication

We can also ask ourselves, "What do we have to multiply

24 with to get 4 608 ?"

1. We start with our Thousands (See the Clue Board)
2. If the numbers are too big, we move down to our Tens. (See Clue Board)
3. The number that we use ($24 \times 100 = 2400$) we Subtract from the 4 608 to see what is left.
4. Then we move to our Tens (See Clue Board)
5. The number that we use ($24 \times 90 = 2160$) we Subtract from the 2 208 to see what is left.
6. Then we move to our Units (See Clue Board)
The number that we use ($24 \times 2 = 24$) we subtract from to see what we are left with.

7. If your answer is 0, then you have no remainder.
8. To get your final answer, you add all the numbers you multiplied with (See highlighted parts)

$$4\,608 \div 24 = 192$$

Example 2: $8\,725 \div 351$

24	351	8 725	
	- 7 020		(351 x 20)
	1 705		
	- 1 404		(351 x 4)
	301		(This number is smaller than what you are dividing with, so it is your remainder)

CLUE BOARD

* We multiply with the number we are dividing with. In this case **351**

Start with your **Thousands**

$$351 \times 1\,000 = 351\,000$$

(The answer is too big)

Go to your **Hundreds**

$$351 \times 100 = 35\,100$$

(The answer is too big)

Go to your **Tens**

$$351 \times 10 = 3\,510$$

$$351 \times 20 = 7\,020$$

$$351 \times 30 = 10\,530 \text{ (Too big)}$$

Go to your **Units**

$$351 \times 1 = 351$$

$$351 \times 2 = 702$$

$$351 \times 3 = 1\,053$$

$$351 \times 4 = 1\,404$$

$$351 \times 5 = 1\,755 \text{ (Too big)}$$