

Student Worksheet 1

TI-15 Explorer™: Prime Factors

W1

Name: _____

A number is a **FACTOR** of another if it divides **EXACTLY** into that number.

1. Find ALL the factors of 60, use the table below as a guide and complete the table as you go.

Use your calculator if needed, to divide 60 by whole numbers to try and see if they are factors.

If the answer is a whole number then the number you divided by **IS** a factor of 60.
e.g. $60 \div 2 = 30$ so 2 is a factor of 60.

Now if you divide 60 by 30, $60 \div 30 = 2$, of course it will divide exactly into 60 too, so 30 is also a factor of 60.

Both the numbers, in this example 2 and 30, are called a **FACTOR** or '**Gozinter**' of the given number, in our case 60.

Number to try dividing into 60	Answer	Factor? Yes or No 'Gozinter'	Any factors found
1	60	Yes	1, 60
2	30	Yes	
3			
4			
5			
6			
7			
8			
....			
....			

Now list all the **FACTORS** of 60:

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2. How many different factors does 60 have? **Remember to include 1 and 60.**

3. In your list of factors of 60 above draw a circle around any that are PRIME numbers. **Remember 1 is not a prime number!**

4. On another sheet of paper use the table method as in Q1 to find and list all the factors of the numbers in the table below. It may be easiest to list them in pairs as you go.

Complete the table, including finding the **square root** of the original number using your calculator. If you do not know what the **square root** is ask your teacher or leave that column blank.

(Hint: play with the $\sqrt{\quad}$ button on your calculator to see what it does.)

Number	List of factors Circle any that are prime numbers	How many factors does this number have altogether?	Any PRIME factors found	$\sqrt{\text{Number}}$ from your TI-15
24				$\sqrt{24} = 4.9$
17				
36				
25				
50				
64				
72				
Add other numbers to try				

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5. From your table find any numbers which have an ODD number of factors?

6. Find another number that you think might have an odd number of factors and explain why.

7. Challenge question: When finding factors, how do you know when to stop?
