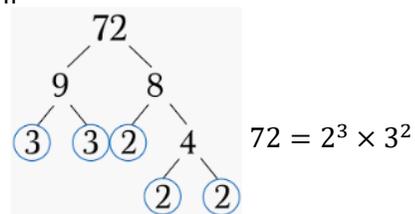
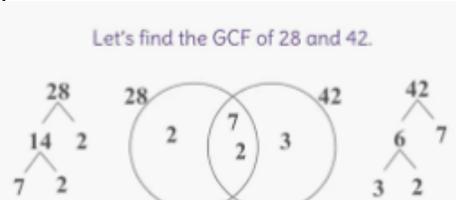
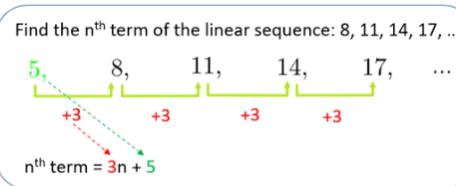
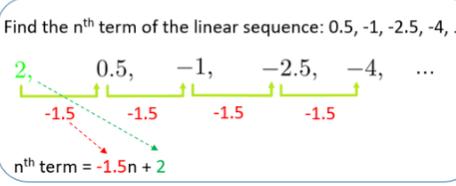


## Some key points to learn

1. Factor	<b>Factor</b> The factors of a number are any numbers that divide into it exactly. This includes 1 and the number itself. For example, the factors of 6 are 1, 2, 3 and 6.
2. Multiple	<b>Multiple</b> The multiples of a number are all the numbers that it will divide into. This includes the number itself. For example, the multiples of 2 are 2, 4, 6, 8, 10, 12, 14, 16...
3. Prime numbers	A number that only has two factors - itself and 1. For example 2, 3, 5, 7 and 11 are prime.
4. Prime factor tree	To find the prime factors of a number make a tree as below where each pair multiply to make the number above. Stop when you get a prime number and circle it 
5. HCF LCM from a Venn diagram	Draw the prime factor trees for both HCF multiply numbers in the middle section $7 \times 2 = 14$ LCM multiply all numbers $2 \times 7 \times 2 \times 3 = 84$ 

## Some key points to learn

7. Standard form	0.005 can be written as $5 \times 0.001$ . Which is $5 \times 10^{-3}$  36,000 can be written as: $3.6 \times 10\ 000$ So, $3.6 \times 10^4$
8. Linear Sequence	A sequence which increases or decreases by the same amount each time is called a <b>linear sequence or arithmetic sequence</b>
9. nth term	use algebra to work out what number is in a sequence if the position in the sequence is known.
10. Finding the nth term of a linear sequences	<p style="text-align: center;"><b>Linear Sequence</b></p> <p>A linear sequence is a list of numbers that increases or decreases by the same amount each time.</p> <p>Find the <math>n^{\text{th}}</math> term of the linear sequence: 8, 11, 14, 17, ...</p>  <p>Find the <math>n^{\text{th}}</math> term of the linear sequence: 0.5, -1, -2.5, -4, ...</p> 
11. Geometric sequence	A geometric sequence has a common ratio which is a multiplication or division. E.g. 2, 4, 8, 16, 32, 64, ..... The common ratio is $\times 2$

# Castle Manor Academy

## Year 10 Core Maths Autumn 1 Knowledge Organiser

### Big picture

During this term you will be working on:

#### **Factors multiples and Primes**

Find the factors and multiples of a number • Find prime numbers • Find the prime factors of a number • Determine highest common factor (HCF) by prime factorisation • Determine the lowest common multiple (LCM) by prime factorisation.

#### **Indices, powers and roots:**

Understand the meaning of higher powers and know how to find these • Understand, derive and use the rules of indices with integer values • Recognise and calculate with square numbers and cube numbers, knowing square and cube roots as appropriate • Understand the meaning of roots and how to find these, including through approximation

- Efficient use of a calculator, when appropriate.

#### **Standard Form:**

Multiply and divide numbers by any power of 10

- Convert numbers to and from standard form
- Perform calculations involving standard form
- Efficient use of a calculator, when appropriate

#### **Sequences:**

- Recognise and describe arithmetic and geometric sequences • Find a formula for the  $n^{\text{th}}$  term of a linear and geometric sequence

### Useful links

<https://corbettmaths.com/contents/>

Hegarty clips 27-35, SF 123-128, sequences 197,198,264,919-922