

## Year 9 sets 2a and 2b w/c Monday 27<sup>th</sup> April

Dear all,

I hope you are all staying happy and healthy.

This week we are going to focus on NUMBER topics, most of which you will have met before; a new topic we will look at towards the end of the week will be laws of indices.

We would normally have 3 hours of class time plus 1 hour of homework so you should aim to spend 4 hours completing the following tasks which I have grouped into 3 'sessions'.

### Session 1:

Please complete the two assignments I have sent to you via Mathswatch:

Factors Multiples and Primes

Prime factor decomposition, HCF, LCM

\*In the overview section, you will see linked videos to help you if you have forgotten how to tackle these questions\*

### Session 2:

Please complete the two assignments I have sent via Mathswatch:

Squares, cubes and roots

Working with Indices

\*In the overview section, you will see linked videos to help you if you have forgotten how to tackle these questions\*

You also need to be able to estimate the answer to square roots. For example:

*What is  $\sqrt{76}$*

Let's read it again as "What number do we multiply by itself to make 76?" Well, we know we multiply... Wait, 76 isn't one of our square numbers. Hmmm, Let's look at where 76 would fit into our list of square numbers.

$$8^2 = 8 \times 8 = 64$$

$$?^2 = ? \times ? = 76$$

$$9^2 = 9 \times 9 = 81$$

So, 76 is between 64 and 81, so our missing square root must be somewhere between 8 and 9. But, because this doesn't give us an actual answer, it is just an estimate! So, really, this question should have been "Find an estimate for  $\sqrt{76}$ "

**In your books**, please answer these two questions in the same manner:

Question 1: Find an estimate for  $\sqrt{40}$

Question 2: Find an estimate for  $\sqrt{135}$

### Session3:

For the next topic on Index laws you need to understand what is meant by the word '**RECIPROCAL**'. Please complete the short assignment I have sent you with this title after watching the video in the overview section.

Your second new skill involves learning the first 5 **Laws of Indices**:

Rule	Example
$a^m \times a^n = a^{m+n}$	$2^5 \times 2^3 = 2^8$
$a^m \div a^n = a^{m-n}$	$5^7 \div 5^3 = 5^4$
$(a^m)^n = a^{m \times n}$	$(10^3)^7 = 10^{21}$
$a^1 = a$	$17^1 = 17$
$a^0 = 1$	$34^0 = 1$

Please complete the assignment I have sent you after carefully watching the video on Index notation that I have sent you. \*In the overview section, you will see linked videos to help you if you have forgotten how to tackle these questions\* Please make a revision card/ poster for these rules.

**To summarise:** 6 Mathswatch assignments (Factors, Multiples and Primes; Prime factor decomposition, HCF and LCM; Squares, cubes and roots; working with indices, Reciprocals and The first 5 rules of Indices, all need to be completed with 70% accuracy or higher, all due by Sunday 3<sup>rd</sup> May. All have linked lessons/videos to support if you need it. You also have 2 questions on estimating roots to complete in your books.

### Optional Extension work:

Take look at some common mistakes that students make in various topics. This is a great way to highlight any misunderstanding that you may have accidentally picked up when learning these topics. Copy the link and have a go at the challenge: [https://www.youtube.com/watch?v=mJN5fUOla-A&feature=emb\\_title](https://www.youtube.com/watch?v=mJN5fUOla-A&feature=emb_title)

Very best wishes to you all, Mrs Todd ☺