

Bridging the gap: GCSE to A level Physics

Prefixes and units

20.3 is the **size or magnitude** of the quantity

→ 20.3cm ←

m is the **unit**. m stands for metre so we know the quantity is a distance. You need to be able to recall a number of units.

c is a prefix. Prefixes are symbols for numbers, best remember in the form 10^x . Centi or c stands for one hundredth, 0.01, or 10^{-2} .

We must always remove the prefix before using it in a calculation except for mass which is measured in kg or kilograms just to be difficult...

So on a calculator when doing a calculation we would type 20.3cm as...

2 0 . 3 ×10⁽⁻⁾ 2

Task 1: Complete the table by putting the symbol and word for the unit of the following quantities.

Quantity	Unit		Quantity	Unit		Quantity	Unit	
	symbol	word		symbol	word		symbol	word
mass	kg	kilogram	force			potential difference		
length			pressure			electrical resistance		
time			energy			electrical charge		
temperature			power			Radioactive activity		
Electric current			weight			Magnetic flux density		
Amount of substance			frequency			Electrical capacitance		

Task 2: Learn the prefixes and the number they represent. Complete the table by putting the power of ten in the last column. Centi or c has been done for you. Then convert the following quantities by replacing the prefix and then putting the number into correct standard form if you want.

Prefix		Number as ten to the power of
symbol	word	
T	tera	10
G	giga	10
M	mega	10
k	kilo	10
c	centi	10^{-2}
m	milli	10
μ	micro	10
n	nano	10
p	pico	10
f	femto	10

1. $30\text{mA} = 30 \times 10^{-3} \text{ A} = 3.0 \times 10^{-2} \text{ A}$

2. $50\text{THz} =$

3. $630\text{nm} =$

4. $76\text{kg} =$

5. $30 \text{ kV} =$

6. $78\text{GC} =$

7. $37\text{MJ} =$

8. $128\mu\text{F} =$

9. 0.15fm

Tricky one to end

10. $6000\text{mm}^2 =$

Make a poster which shows different things measured in lengths for each prefix. For example the wavelength of visible light is measure in nanometres (nm)

Maths skills

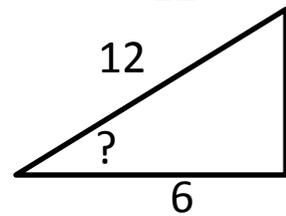
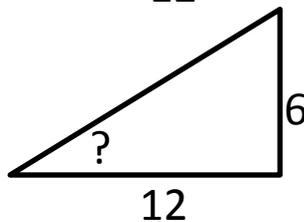
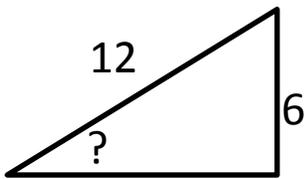
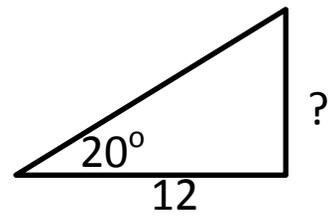
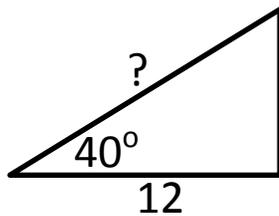
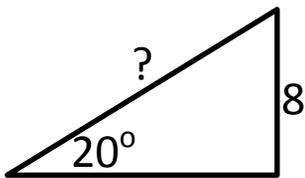
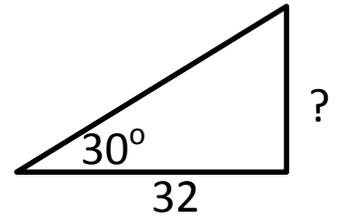
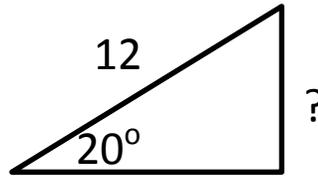
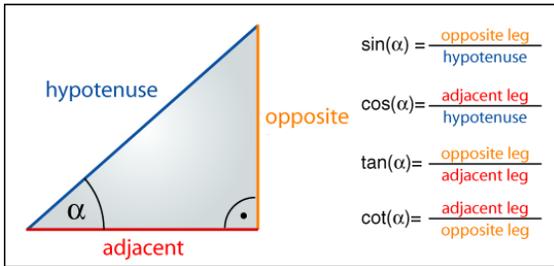
Significant figures

Write the following numbers to 3 significant figures

1. 387560 2. 3732 3. 0.35274 4. 0.12345 5. 0.000125 6. 0.01234

Trigonometry

Find the missing quantity (?) using your trigonometry skills!



The language of Science

When carrying out practical work we use words which have different meanings in an everyday context. Learn the Physics definition for the following words.

Accuracy, Precision, Random Uncertainty, Range, Repeatability, Resolution, Systematic uncertainty, True value and uncertainty.

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In the search box type AQA Physics and then choose free in the filter.

Select Physics: AQA A level

From the menu on the left the choose Measurements & Errors then work through the 5 short units.