

AS Physics Summer Work

Welcome to AS Physics! I look forward to meeting you soon.

In the meantime, this document is designed to keep your brain ticking over for a bit of the summer (don't forget to enjoy the sun too!)

When you arrive in September, please bring your answers to these questions. Don't worry if you can't complete them all.

Quick Course Overview:

- Follows the AQA A-Level Syllabus
- Study 3 x 1.5hrs of Physics per week

Assessment:

- Undertake an assessment 4 weeks into the course
- Complete 1 graded homework each week
- Complete extra enrichment activities such as watching relevant videos/making notes/mindmaps
- You will undertake topic tests at the end of each topic
- Sit 2 exams in June which will make up your AS Grade, you will need to achieve a C grade to move into Year 13

Expectations:

- Attend all lessons, if you are unable to attend, you should email me and I can send you the work you miss.
- Complete all homework on time
- Complete all core practicals within the year (if you miss these, you will have to catch them up)

About You:

Why have you chosen to study Physics?	
What topics do you like, or are looking forward to studying in Physics?	
What do you find tricky about Physics?	

Mathematical Skills

Mathematical skills are extremely important in physics. The tasks below are things you will need to be able to do in order to succeed in your physics studies.

Formula

1. Write down three formulae from GCSE Physics. State the units of each quantity in the formula.
2. Re-arranging equations is an important part of Physics, re-arrange the following equations making the stated letter the subject:
 - a. $V = IR$, make I the subject
 - b. $\rho = \frac{m}{V}$, make m the subject
 - c. $pV = nRT$, make R the subject
 - d. $\rho = \frac{Rl}{A}$, make A the subject
 - e. $v = u + at$, make a the subject

Numbers

3. Complete the following table of standard prefixes. e.g. Mega is equivalent to 10^6

Prefix	Symbol	Meaning
		10^{-15}
nano		
	μ	
milli		
	k	10^3
Mega	M	10^6
Giga		10^9

Standard Form

Convert the following into normal numbers:

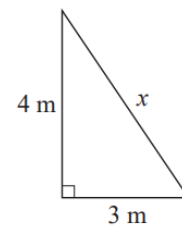
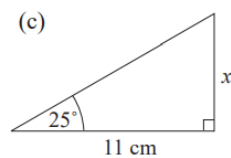
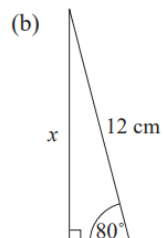
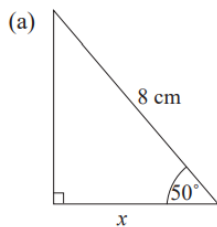
1. 2.4×10^3
2. 3.505×10^{-4}
3. 8.31×10^6
4. 6.002×10^2
5. 1.5×10^{-4}
6. 4.3×10^3

Convert the following into standard form:

1. 2530
2. 280
3. 0.00077
4. 0.0091
5. 1,872,000
6. 12.2

Triangles

Find the unknown sides, x in each diagram:



Suggested Things To Watch

As a little extra, you could consider watching the following films or series. They aren't necessary, but might be interesting if you haven't seen them and have good links to physics :)

- Interstellar (2014)
- Moon (2009)
- Chernobyl (2019) - Series