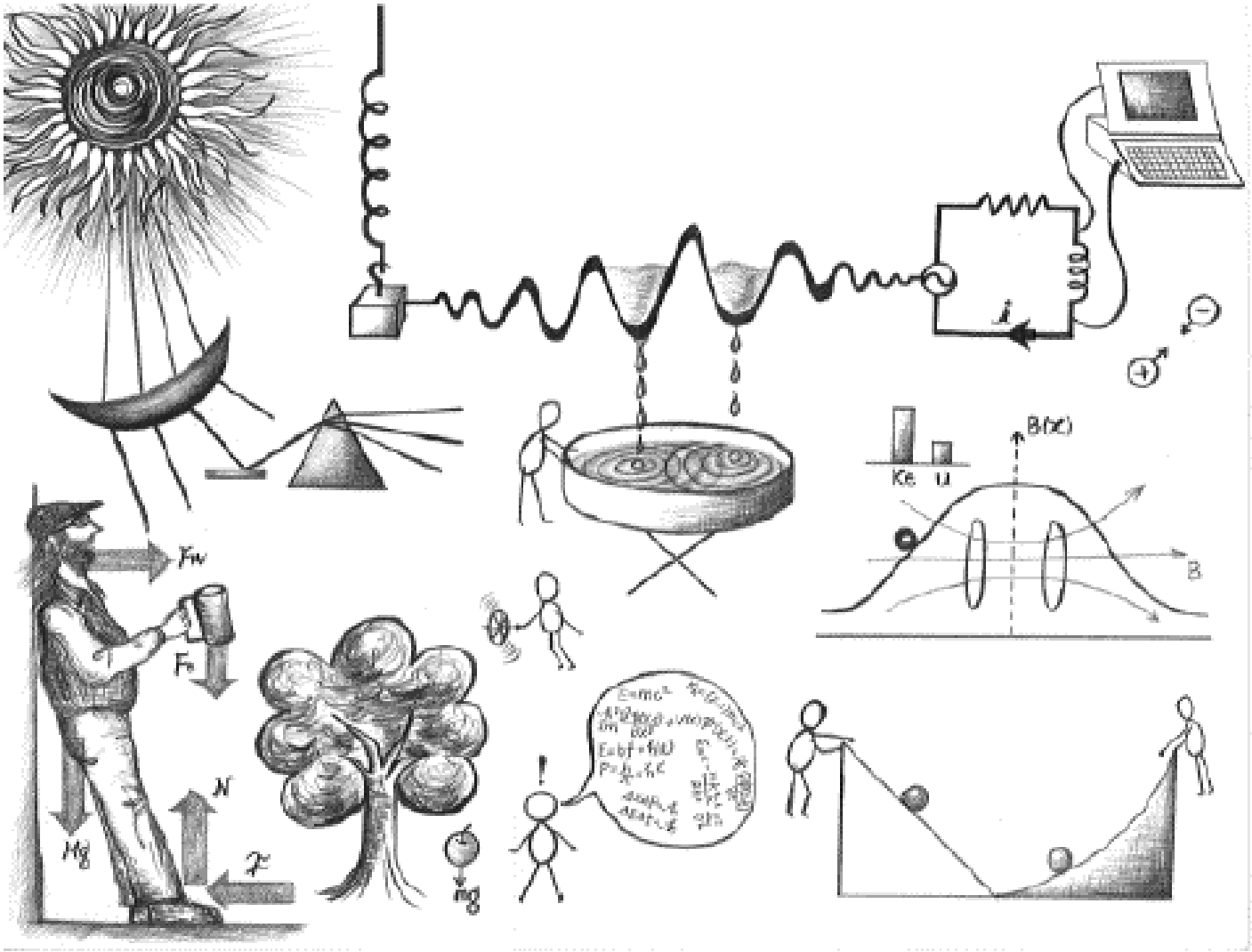
WELCOME TO A-LEVEL PHYSICS



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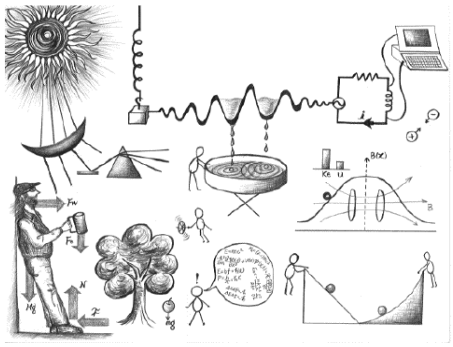
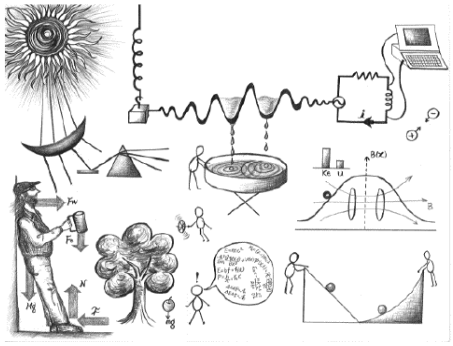


Our Expectations

- ✓ Be focused in lessons and put in 100% effort.
- ✓ Actively participate in all lessons.
- ✓ Be punctual to all lessons.
- ✓ Bring at least your current topic notes to every lesson.
- ✓ Bring a minimum of a pen, pencil, ruler, and scientific calculator to all lessons.
- ✓ Work independently in your own time (5 hours per week – directed and non directed time)
- ✓ Meet homework deadlines.
- ✓ Thoroughly revise for all tests/controlled assessments/exams.
- ✓ Catch up all work and HW missed before the next lesson.
- ✓ Seek assistance from your teacher (in lesson or Science Surgery) if you don't understand an idea completely.
- ✓ Listen, be polite, courteous and respect others views/ideas.
- ✓ Be committed to achieving personal levels of excellence.
- ✓ Keep your folders organised and up-to-date.
- ✓ Keep staff up to date if you know you will have to miss a lesson e.g. trips etc.
- ✓ No mobile phones visible or audible in lessons.
- ✓ Expect to be successful.

Welcome to AS Physics



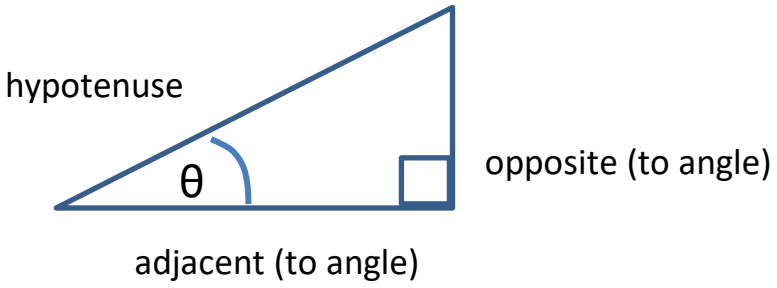
Summer tasks

1. Buy two folders to store your course notes in.
   You will use one for each teacher. It is a good idea to also buy section dividers to separate each module as well.
2. Find your G.C.S.E. Physics and Maths work and keep it in a safe place. The revision guides you might have bought should be kept too. Use them to refresh your knowledge and understanding of:
   a. *Graphs of motion*
   b. *Electric circuits*
3. Complete the work titled “Properties of triangles” on page 4 and 5
4. Complete the work titled “Electromagnetic Waves” on page 6
5. Consult the suggested reading guide for Physics that you receive during induction day and read at least one of the suggested books (but not one of the textbooks).

You will be required to hand in your completed summer work (pages 4, 5 and 6) during the first week of Physics lessons. This will be marked (out of a total of 70 marks) and graded by your teachers.

Assessed work: properties of triangles

1. Complete the information below (from memory?). **Answer in the boxes**.



a) sin θ = $\frac{\square}{\square}$ b) cos θ = $\frac{\square}{\square}$ c) tan θ = $\frac{\square}{\square}$

d) The sum of the angles in a triangle = ☐

e) hypotenuse = ☐ + ☐ **(12)**

2. Use a scientific calculator to find the answers to the following to 3sf:

a) cos 81° = ☐

b) tan 37° = ☐

c) sin 66° = ☐

d) sin 30° = ☐

e) cos 60° = ☐ **(5)**

3. Use a Scientific calculator to find the values of θ to 3sf:

a) cos θ = 0.32 θ = ☐

b) tan θ = 1.0 θ = ☐

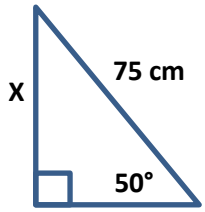
c) sin θ = 0.707 θ = ☐

d) sin θ = 0.886 θ = ☐

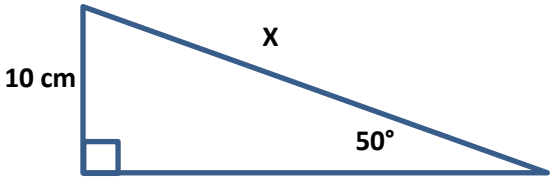
e) cos θ = 0.0 θ = ☐ **(5)**

Assessed work: properties of triangles continued…

4. For each of the following triangles, find the angles and lengths marked with a letter. Answer in the space below the diagram. **Show all working out.**



= _____ **(3)**



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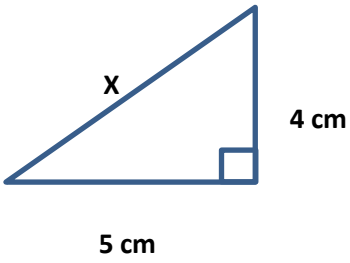

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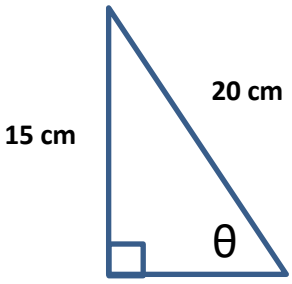
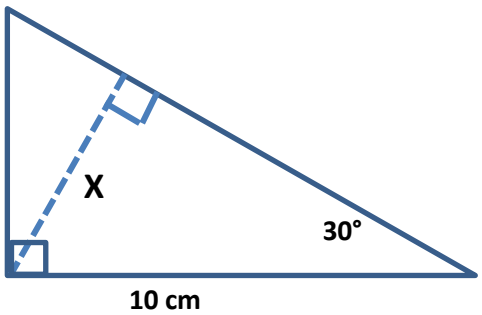


= _____ **(3)**

5. Find the missing lengths in these triangles. **Show all working out.**



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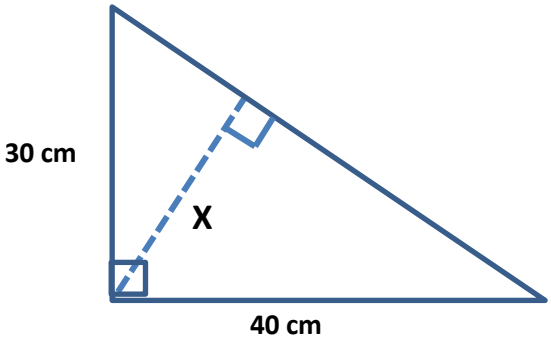

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Assessed work: Electromagnetic Waves

1. Calculate the missing value in each row of the following table. Write your answers in **standard form**.

Region of spectrum	Frequency (Hz)	Wavelength (m)	Speed (m/s)
Radio waves	5×10^{5}	6×10^{2}	
Microwaves	5×10^{10}		
		6×10^{-5}	
Visible Light	5×10^{14}		
Ultraviolet		6×10^{-8}	
X-rays	5×10^{16}		
Gamma			

(15)

2. Describe an example of how each type of electromagnetic wave is used in our lives and explain why it is suitable for this application:

Region of spectrum	Description of use:	Why the wave is suitable for this use:
Radio waves		
Microwaves		
Visible Light		
X-rays		
Gamma		

(14)