

Things to remember in the last hour before the exam: Level 2 Waves

(This is not a revision sheet – you’ve done that by now - it’s a list of things you might want to memorise at the last minute...)

- Most equations are only used once so highlight an equation once you have used it. Any constants you need e.g. $n = 1.5$ for Perspex will be given to you on the separate equation sheet. Any additional formula you require will be given (e.g. circumference of circle = $2\pi r$)
- You must convert quantities into **SI** before using them in an equation (e.g. $2\text{ cm} = 2 \times 10^{-2}\text{ m}$)
Remember prefixes ($\mu = 10^{-6}$, $\text{m} = 10^{-3}$, $\text{c} = 10^{-2}$, $\text{k} = 10^3$, $\text{M} = 10^6$, $\text{G} = 10^9$)
- If you can’t remember the units, use the units on the other side of the equation e.g. $p = mv$ so momentum, p has units of $\text{kg (from } m) \times \text{m s}^{-1}$ (from v) i.e. kg m s^{-1}
- If you are asked to give the answer to the correct number of significant figures use the information in the question (the least number of significant figures) and write your rounded answer after your calculated answer (and not instead of) – have a guess if you can’t remember and it isn’t the same rule as Chemistry
- There are two lots of equations for curved mirrors and lenses – use whichever one your teacher taught you – don’t forget one set of equations are measured to the poles, the other to the focal point.

$$\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i} \quad \text{or} \quad s_i s_o = f^2$$

$$m = \frac{d_i}{d_o} = \frac{h_i}{h_o} \quad \text{or} \quad m = \frac{f}{s_o} = \frac{s_i}{f}$$
- The Assessment Specifications for Level 2 state that **Equipment to bring is:** A calculator and a ruler. Expect to have to draw a ray diagram and possibly a wave front diagram
- Ray diagrams are drawn with a ruler using solid lines for rays of actual light and dotted rays for virtual rays of light. There are normally three rays you can draw to work out the position of the image based upon the position of the object and the mirror/lens.
- Concave and convex refer to the shape of the mirror/lens and not their behaviour so a concave mirror is very similar to convex lenses in behaviour.
- Convex mirrors and concave lens are boring compared to the variety of effects produced by concave mirrors/convex lenses.
- If your calculator is reset at the start of the exam, don’t forget to put it back to degree for calculating the sine of angles in Waves.
- Wave fronts are always at 90° to the direction the wave front is travelling.

