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

(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…)

1. Most equations are only used once so highlight an equation once you have used it. Any constants you need e.g. g = 9.8 ms^{-2} will be given to you on the separate equation sheet.
2. You must convert quantities into **SI** before using them in an equation (e.g. 2 cm = 2 x 10^{-2} m) Remember prefixes (μ=10^{-6}, m = 10^{-3}, c = 10^{-2}, k = 10^{3}, M= 10^{6}, G =10^{9})
3. 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 kg (from m) x m s^{-1} (from v) i.e. kg m s^{-1}
4. 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
5. Use the equations of motions (e.g. $\mathbf{v_f = v_i + at}$) to solve motion problems and **NOT** v=Δd/Δt and a =Δv/Δt I suggest you cross these two out when you get started on the exam
6. If an object is thrown **upwards** on Earth, a = **-** 9.8 ms^{-2}, when it **falls** down again, a = **+** 9.8 ms^{-2}
7. An object in **Equilibrium** means that upward **forces** = downward **forces** AND clockwise **torques** = anticlockwise **torques**
8. Separate projectile motion into **horizontal** (velocity stays same, no acceleration) and **vertical** (velocity changes, accelerates towards Earth) components. Use SOHCAHTOA to work out the values
9. Draw vectors with labels and arrows including two arrows on the resultant – you will only have to deal with right angled triangles. If it asks for **labelled forces**, then **label** them please.
10. An elastic collision is one where kinetic energy is conserved – an inelastic collision, some kinetic energy is converted to other types of energy such as heat or sound
11. Δp = F x Δt is rarely used but F = Δp/Δt is. Memorise **F = Δp/Δt** and write it down on the exam paper as soon as you are allowed to
12. Work done W is **Energy** changed measured in **Joules**
13. Circular motion: F and a towards centre – if F is removed flies off at tangent due to Newton's first law of motion
14. If it asks for a conservation law (e.g. "What assumptions did you make?") it's the conservation of momentum or the conservation of energy – if needs be flip a coin
15. If it asks you to explain something (e.g. "The 400 g teddy bear is now hung on a stiffer spring which has **double** the spring constant. Discuss how this affects the **extension** of the spring") don't be afraid to put in numbers twice e.g. F = -kx so x = -F/k = -(.4x9.8)/k so if k=5 then x = 3.9/5 but if k=10 then x = 3.9/10 so if k is bigger, x is smaller