50 Key Facts - Physics Paper 2

What is a scalar quantity?		Only has magnitude (size) No direction
What is a vector quantity?		has both a size and direction
What is Velocity?		Speed and direction; rate of change of displacement
What is acceleration?		Rate of change of velocity
What is represented by the enclosed area between the line and the x-axis in a velocity-time graph?		Displacement travelled
State Newton's first law of motion		If there is no resultant force on an object, it will continue with a constant velocity if moving or remain at rest if stationary
State Newton's second law of motion		F=ma Resultant Force = mass x acceleration
State Newton's third law		Every force is paired with an equal and opposite reaction force
What is stopping distance?		The total distance travelled by a car during the time between the driver seeing the hazard and the car coming to rest
What is thinking distance?		The distance travelled by the car from when the driver sees the hazard and applies the brakes
What is braking distance?		The distance travelled by the car while the brakes do work to the wheels to bring them to a stop
What factors affect thinking distance?		Speed, alcohol, drugs, tiredness, distractions
What factors affect braking		Speed, condition of the road,

50 Key Facts - Physics Paper 2

distance?		weather conditions, conditions of brakes
Name 3 non contact forces		Gravity, electrostatic, magnetism
Name 2 contact forces		Friction, normal contact force, air resistance
What is weight?		The force on an object due to its mass in a gravitational field
What does Newton's first law tell us about objects moving with uniform velocity?		The resultant force on the object must be zero / the forces acting on an object must be balanced
What does Newton's first law tell us about objects moving with changing speed or direction		There must be a resultant force on the object / the forces must not be balanced
What are the units of velocity?		m/s (metres per second)
What are the units of acceleration?		m/s^2 (metres per second per second)
What are the units of Force?		Newtons
What are the units of displacement?		metres
What are the units of weight?		Newtons
What is the difference between elastic and inelastic deformation?		Elastic deformation: the object will return to its original size and shape. Inelastic deformation: the object will not return to its original size and shape
What is the amplitude of a wave		The maximum displacement of a point on a wave from its undisturbed position (from centre to peak)
What is the wavelength of a wave?		The distance across one complete wave cycle (e.g. between two peaks)
What is the time period of a wave?		The time for one complete wave cycle to pass a point

50 Key Facts - Physics Paper 2

What is the frequency of a wave?		The number of wave cycles to pass a point per second
What are the features of a transverse wave?		The wave travels at right angles to the direction of oscillations
What are the features of longitudinal waves?		The waves travels parallel to the direction of oscillations
What is the unit for wavelength		metres
Name the 7 groups in the electromagnetic spectrum		Radio waves, microwaves, infra-red radiation, visible light, ultraviolet, X-rays, gamma rays
Which part of the electromagnetic spectrum can our eyes detect?		Visible light
Which part of the electromagnetic spectrum has the longest wavelength/lowest frequency		Radio
Which part of the electromagnetic spectrum has the shortest wavelength/highest frequency		Gamma
State a use of radio waves		Television and radio communication
State 2 uses of microwaves		Satellite communication, cooking
State three uses of infra-red waves		Night vision, remote controls, cooking
State a use of visible light		Fibre-optics, cameras, display screens
State 3 uses of ultra-violet light		Fluorescent light bulbs, tanning beds, counterfeit note detection
State 2 uses of X-rays		Medical diagnosis, security at airports
State 2 uses of gamma waves		Radiotherapy, sterilising medical equipment
What are the hazards from UV waves		Ageing of the skin, ionisation in cells can lead to skin cancer

50 Key Facts - Physics Paper 2

What are the hazards of X-rays and gamma rays		Ionisation in cells can lead to cancer
What 3 things do all electromagnetic waves have in common		They are all Transverse, they travel at the same speed (speed of light), they transfer energy from emitter to absorber
What is a permanent Magnet?		A magnet that creates its own magnetic field
What is an induced magnet?		An object that has a magnetic field due to being in the magnetic field of another magnet
What is a magnetic field?		The invisible field around a magnet or wire over which its magnetic force extends
What is a solenoid?		A coil of wire carrying a current, which produces a magnetic field similar to a bar magnet
What is an electromagnet?		A solenoid coiled around a magnetic iron core to strengthen its magnetic field. Using a soft iron core allows the electromagnet to be switched on and off
How can you increase the magnetic field strength of an electromagnet?		Increase the current, increase the number of coils