Interpreting Graphs

A few students are lacking in confidence in their ability to interpret graphs so here are a few questions from the SG Credit Papers for you to practice. You can always do the past paper questions, but here are a few questions to do. I will upload the answers as soon as I've done them! Papers found at the link here

Paper	Year	Question	Look at the graph and answer the work below.
SG Credit	2000	Q3	• Describe, in detail what happens to the resistance of the filament lamp as the lamp is left on? • Suggest why the resistance remains constant after 0.5s
SG Credit	2000	Q6c	• Describe, in detail what happens to the output voltage of the thermocouple as its temperature increases? • What voltage is produced by the thermocouple at 37°C • How could the thermocouple and this graph be used to tell if someone was ill?
SG Credit	2000	Q9c (try the whole question)	• Explain in detail the motion of both the police car and the sports car. • Calculate the acceleration of the police car when it moves off. • Determine the distance travelled by both the police car and the sports car at 50s. • Which car will be in front?
SG Credit	2000	Q12b	• Explain what happens to the gravitational field strength the higher you go from the surface of the Earth. • Over the height of 2800 km does the gravitational field strength halve? • What is the gravitational field strength on the surface of the Earth according to the graph? • The ISS orbits approximately 360 km above the surface of Earth. Determine the gravitational field strength at this height.
SG Credit	2001	Q7a	• From the graph of Resistance against temperature what can you conclude about how the resistance changes with temperature? • Determine the temperature at which the thermistor has a resistance of 2.0 kΩ
SG Credit	2001	Q10	• Is the acceleration greater in the first 10 s or from 10-40 s? Explain how you know this • Determine the distance the aircraft move in the first 10 s? • Determine the distance travelled by the aircraft after 40 s
SG Credit	2002	Q3a	• Determine the resistance of the component under test. • State the voltage across the component when the current is 1.2 A through it.
SG Credit	2002	Q3b	• Does the resistance of the component in part b remain constant? Explain how you know this. • State the voltage across the component when the current is 1.2 A through it. • State the current through the component when the voltage across it is 12 V
SG Credit	2002	Q10	• Describe the motion of the hare over the 25 s. • Describe the motion of the greyhound over the first 25 s • Calculate the acceleration of the greyhound • Calculate the distance travelled by the hare in the first 20s • Calculate the distance travelled by the greyhound in the first 20s

Paper	Year	Question	Look at the graph and answer the work below.
SG Credit	2003	Q17	• State the time when the activity of the source is 1600 MBq • Determine the time taken for the activity of the source to drop to 400 MBq • Determine the half-life of the source from the graph.
SG Credit	2003	Q10	• Describe the motion of the cyclist from the graph. • Calculate the accelerations for each part of the journey • Determine the distance travelled by the cyclist over the 20 s. • State the time(s) when the cyclist was travelling at 6 ms^{-1} • State the speed of the cyclist 2 s onto the journey.
SG Credit	2003	Q11	• Describe how the force of friction on the model boat changes over the 10 s. • State the force of friction acting on the boat 2s after the motor was switched on. • Describe and explain the motion of the boat after 7s. • Looking just at the graph, explain how you could determine the force provided by the motor.
SG Credit	2004	Q9	• Describe the motion of the vehicle for the 150 s described in the graph. • Determine the distance travelled by the vehicle in 150 s • Calculate the acceleration of the vehicle over the 150 s • If the mass of the vehicle is 3000 kg, calculate the unbalanced force on the vehicle.
SG Credit	2004	Q11	• Explain what is shown in the graph from time 0 to 350 s • Explain what occurs between P and Q • Determine the time between P and Q • If the mass of the substance is 500 g and the heater has a power rating of 30 W, determine the specific latent heat of fusion of the substance.
SG Credit	2005	Q4	• State what happens to the current in the vacuum cleaner during the first 4.5 s after switch on. • State the current when the motor has reached full speed. • Estimate the current through the motor 1s after switch on. • Why is this graph not suitable for full marks in an assignment (check the marking instructions)
SG Credit	2005	Q8	• State how the current changes as the voltage across the resistor changes. • State the voltage at which the transistor starts to conduct.
SG Credit	2005	Q11	• Calculate the acceleration of the train during the first 200s • Calculate the length of the journey • If possible draw out the graph for part c and answer part c of this question.
SG Credit	2006	Q3b	• Plot a graph of the results of voltage against current. • Explain which result should be retaken. • Determine the resistance from the graph.
SG Credit	2006	Q5	• Determine the half-life of the radioactive source from the graph.
SG Credit	2006	Q9a	• State the driver's reaction time. • Calculate the braking distance. • Calculate the thinking distance • Calculate the overall stopping distance.
SG Credit	2006	Q11	• The wind blows at a speed of 10 ms^{-1}, state the charging current at this wind speed. • State the wind speed required to produce a charging current of 13 A.

Paper	Year	Question	Look at the graph and answer the work below.
SG Credit	2007	Q7aii	• Why is the received sound at a lower sound level? • Does the length of the pulse change between the transmitted and received sound? • Determine the reduction in sound level between the transmitted and received pulse? • Determine the time between the transmitted pulse being detected and the received sound being detected. • If the sound travels at 1500 ms^{-1} in the ear. Calculate the distance between the device and the inner ear.