Topic 11- always show a full method with your solutions.

Top graph area = 39 m Bottom graph area = 33 +/- 1 m ( to 2 sig fig)

Topic 12. All values approximate, your estimate should be within quoted error.

Left hand graph- 41 squares each square 1 m s-1 x 1 s = 1 m area = 41 m +/- 1 m

Right hand graph 31 squares each square 1 km s-1 x 60 s = 60 km area = 1860 km +/- 60 km

Topic 13.

Graph 1- 0-10 minutes temperature rises at a constant rate from -20 0C to 0 0C of 2 0C min-1.

Ice gaining thermal energy.

10-15 minutes temp is constant at 0 0C as a change of state occurs; solid to liquid.

15- 35 minutes temp rises at 5 0C min-1, constant rate because gradient is constant.

35-75 minutes temp constant at 100 0C, change of state ; liquid to gas.

75-80 minutes rapid increase in temp, gradient steepest 8 0 min-1, gas phase.

( values are expected from the graph as is suitable theory; you are expected to recognise graphs).

Graph 2.

As the distance increases from Earth the (relative) value of g decreases. Large decrease initially seen by steep gradient with gradient decreasing as distance increases.

Taking values from graph:

relative dist 1.0, relative g =100 relative dist 2.0, relative g =25, double d , g drops by 4

relative dist 1.5, relative g = 44 relative dist 3.0, relative g =11, double d, g drops by 4

We are always looking for patterns in data, gradients, areas or values such as above.

In this case doubling the distance drops g by a factor of 4; called the inverse square law.

This is a very important law in Physics

Graph 3.

Section 1 At 0 0C activity low at 20 units ( no units given so we use **units** as a term) rising to a max activity of 100 units at 40 0C.

Section 2 From peak at 40 0C activity rapidly drops to a low of 4 units at 100 0C.

Optimum activity is at 40 +/- 4 0C

Graph 4. 6- sections ( only 2 described you need to write a description for all sections)

Section 1 - Constant acceleration of 3/6=0.5 m s-2 for 6 seconds, covering a displacement from the start point of

(3 x 6)/2 = 9m

Section 2 - constant velocity of 3 m s-1 for 4 seconds covering a displacement of 3 x 4 = 12m