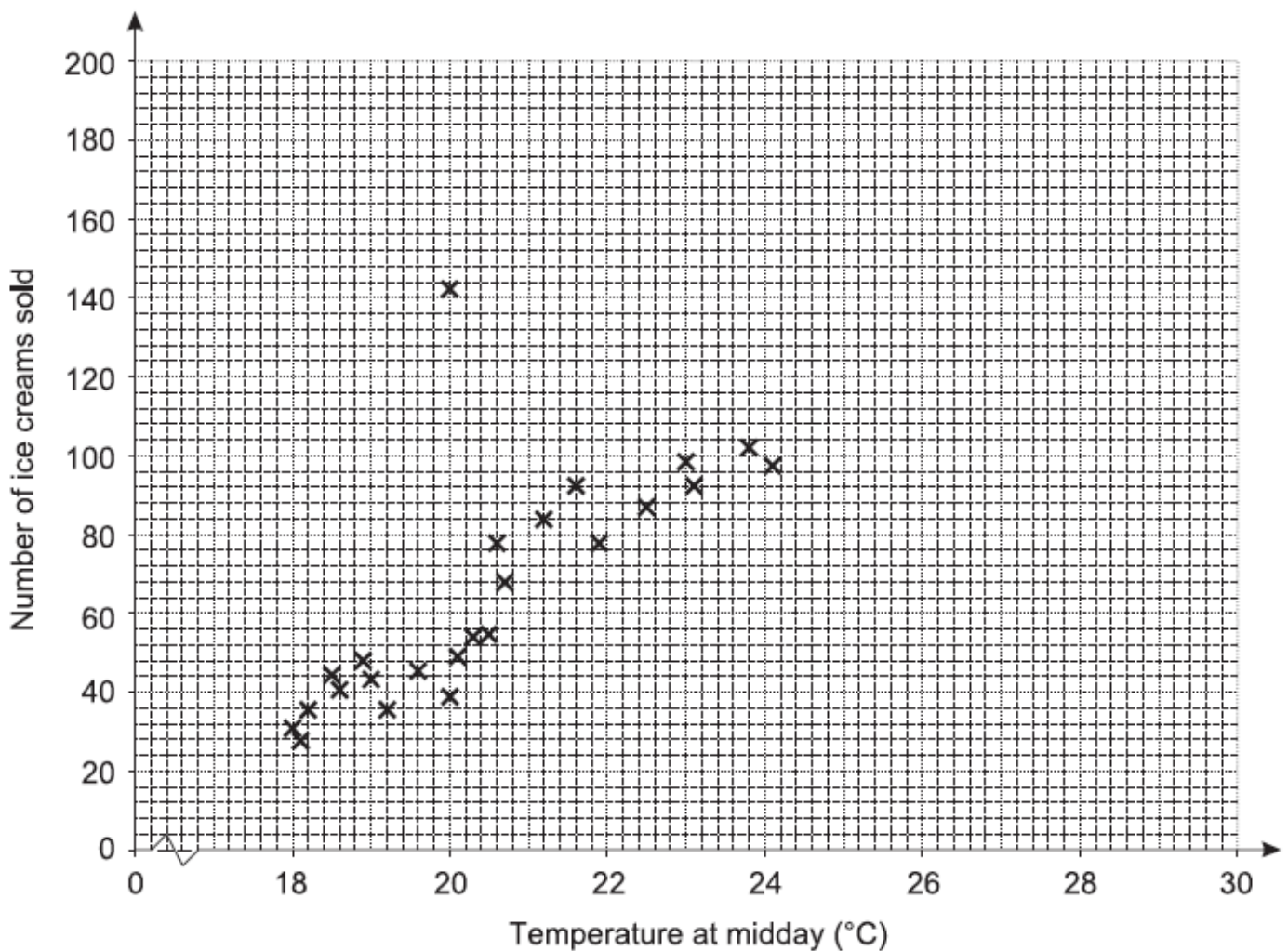# Scatter Graphs

A collection of 9-1 Maths GCSE Sample and Specimen questions from AQA, OCR and Pearson-Edexcel.

Name:	
Total Marks:	

1. The graph shows the number of ice creams sold in a shop each day against the temperature at midday that day.

(a) (i) Describe the relationship between the temperature at midday and the number of ice creams sold.

[1]

(ii) One data point is an outlier.

Give a reason why this does not fit the rest of the data.

[1]

(b) Use the scatter graph to predict the number of ice creams sold on a day when the temperature at midday was

    (i) 22°C

                                            (i) .... [1]

    (ii) 28°C.

                                           (ii) .... [1]

    (iii) Explain which of these two predictions is more reliable.

                                                                   [2]

(c) A newspaper headline reads

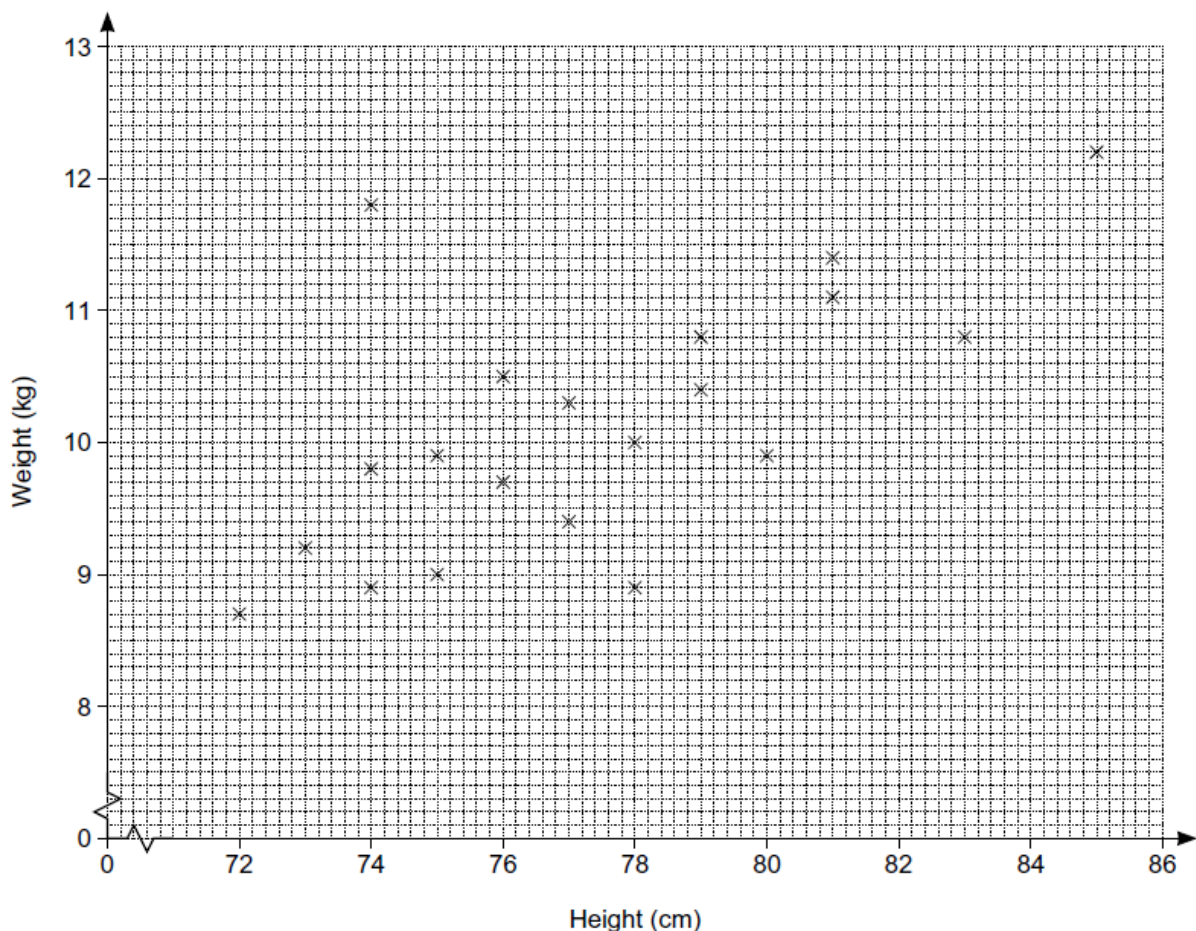   *High temperatures make more people buy ice cream!*

    Does the graph above prove this claim?

    Give a reason for your decision.

                                                                    [2]

2. The scatter diagram shows the height and weight of twenty babies aged 12 months.

(a) Leila is 12 months old. Her height is 81 cm and she weighs 10.4 kg.

Put a cross on the diagram to represent this. [1]

(b) Archie is 12 months old. His height is 75 cm.

Draw a line of best fit and use it to estimate Archie's weight.

.... kg [2]

(c) The height and weight of one of the babies is not typical for babies aged 12 months.

Circle the point on the diagram representing this baby.

[1]

(d) Josie has a baby who is 15 months old.

Her baby has a height of 82 cm.

Josie is going to use the line of best fit to estimate what her baby's weight should be.

Explain why it may not be sensible for Josie to do this.

[1]

3. In a survey, the outside temperature and the number of units of electricity used for heating were recorded for ten homes.

The scatter diagram shows this information.

Number of units used

Outside temperature °C
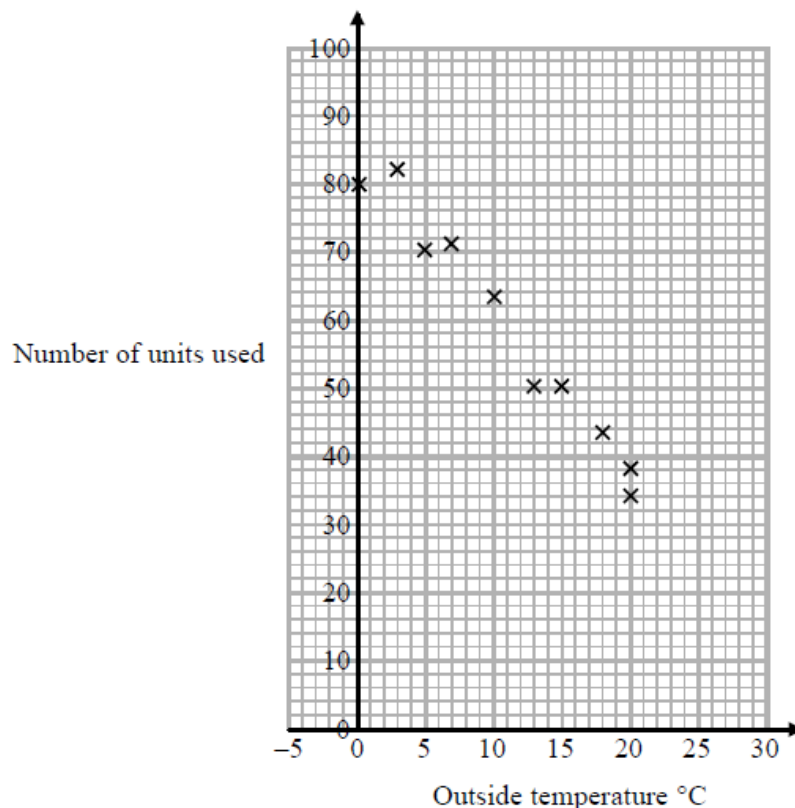
Molly says,

"On average the number of units of electricity used for heating decreases by 4 units for each °C increase in outside temperature."

(a) Is Molly right?

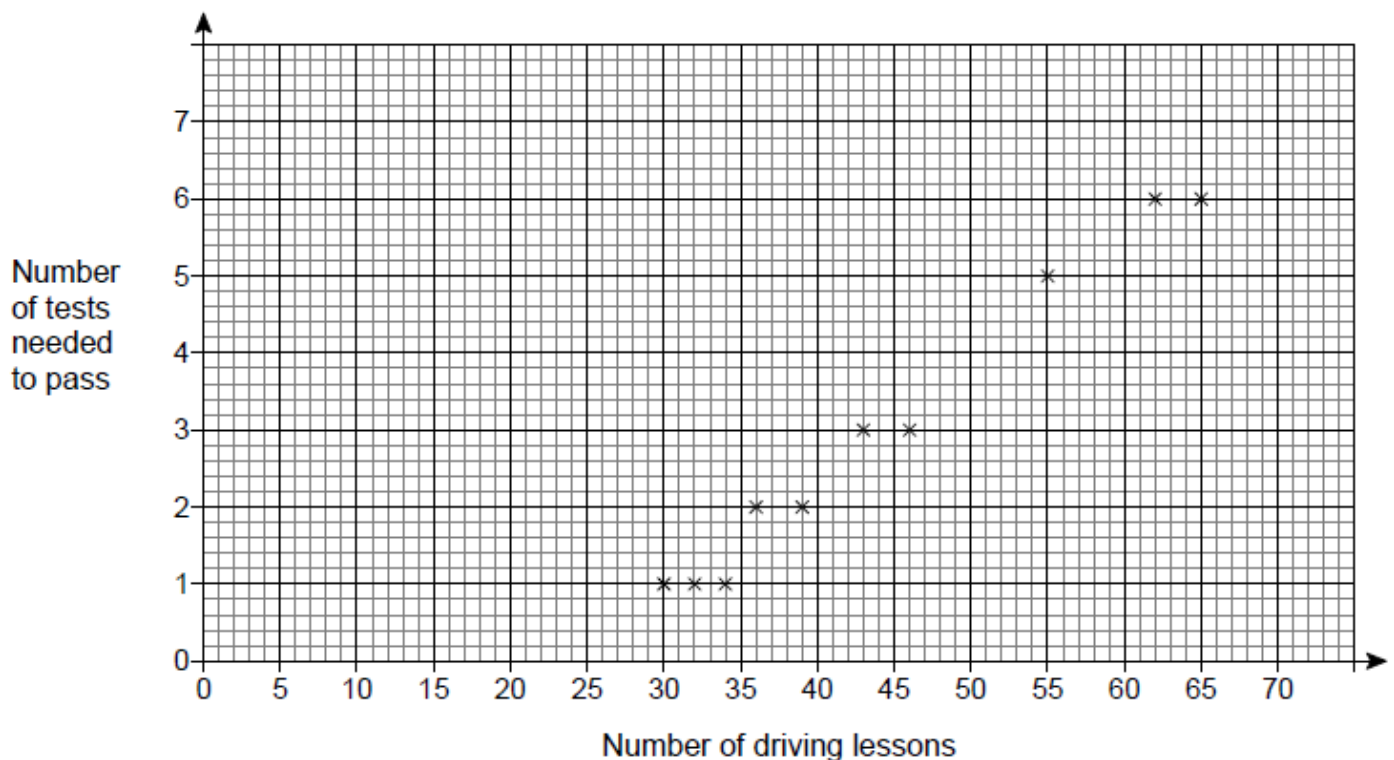Show how you get your answer.

[3]

(b) You should not use a line of best fit to predict the number of units of electricity used for heating when the outside temperature is 30°C.

Give one reason why.

....
...................[1]

4. The scatter graph shows the number of driving lessons and the number of tests needed to pass by 10 people.

Number of driving lessons

(a) What proportion of the 10 people passed on their first test?

[1]

(b) Describe the correlation.

Circle your answer.

[1]

strong positive   weak positive   weak negative   strong negative

(c) Use a line of best fit to estimate the number of tests needed to pass by a person who has 50 lessons.
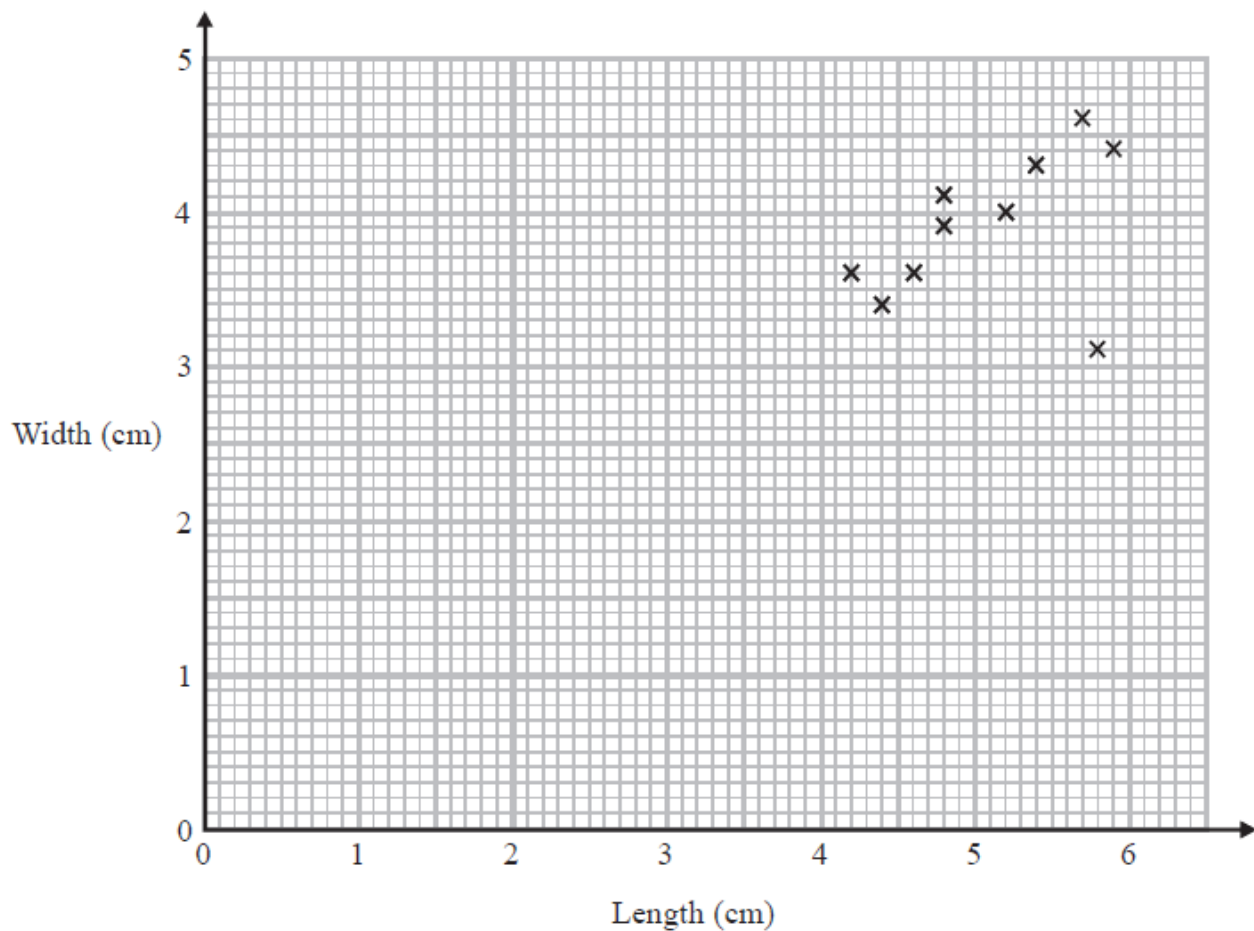
[2]

(d) Meera says,

"I can use the trend to predict the number of driving tests needed to pass for any number of driving lessons."

Comment on her statement.

[1]

5. Katie measured the length and the width of each of 10 pine cones from the same tree.

She used her results to draw this scatter graph.

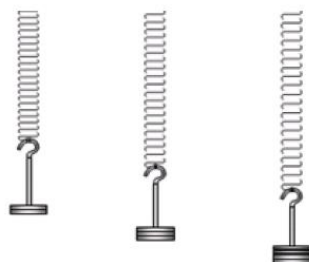(a) Describe one improvement Katie can make to her scatter graph.

[1]

The point representing the results for one of the pine cones is an outlier.

(b) Explain how the results for this pine cone differ from the results for the other pine cones.
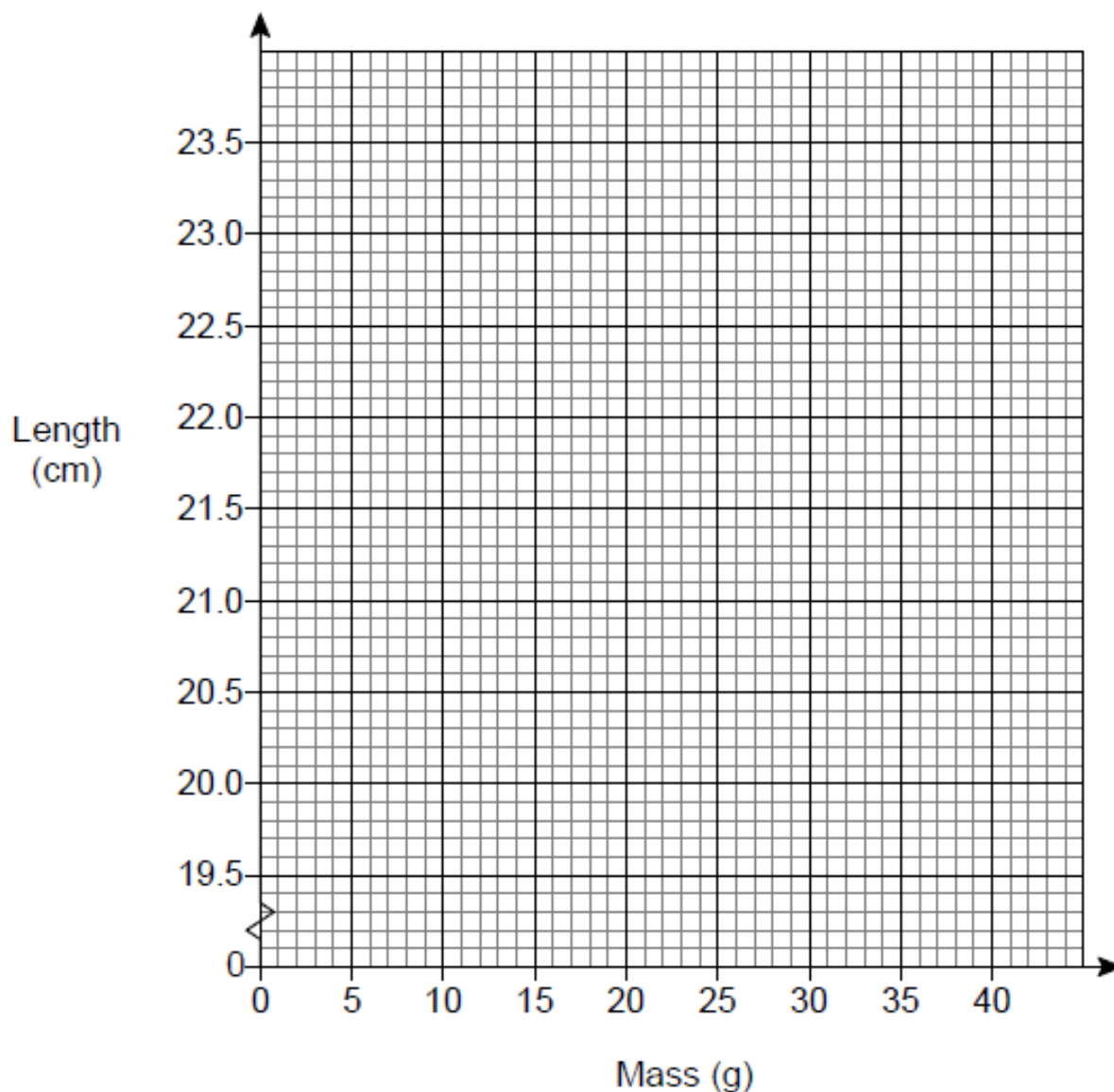
[1]

6. In an experiment, different masses are hung on a spring.

The length of the spring is measured for each mass.

Mass (g)	10	20	30	40
Length (cm)	20.8	21.6	22.4	23.2

(a) Draw a graph to show the length of the spring for masses from 10 g to 40 g

[2]

(b) Estimate the length of the spring with no mass hung on it.

[1]

(c) How much longer is the spring with a 35 g mass than with a 15 g mass?

[2]