

## SCATTER GRAPHS - PRACTICE QUESTIONS



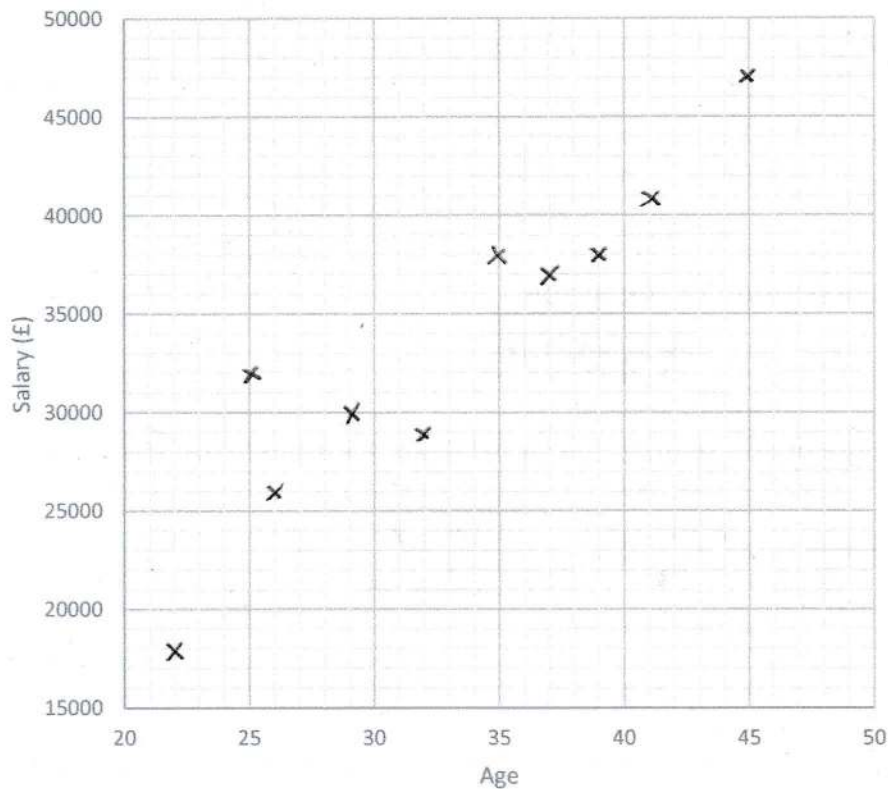
metatutor

1.

The table below shows the ages and salaries of 10 people.

Age	Salary
35	£38,000
26	£26,000
41	£45,000
29	£30,000
22	£18,000
32	£29,000
45	£47,000
37	£37,000
39	£38,000
25	£32,000

(a) Plot the data on the axis below.



(b) Describe the relationship between age and salary.

As age increases, salary also increases.

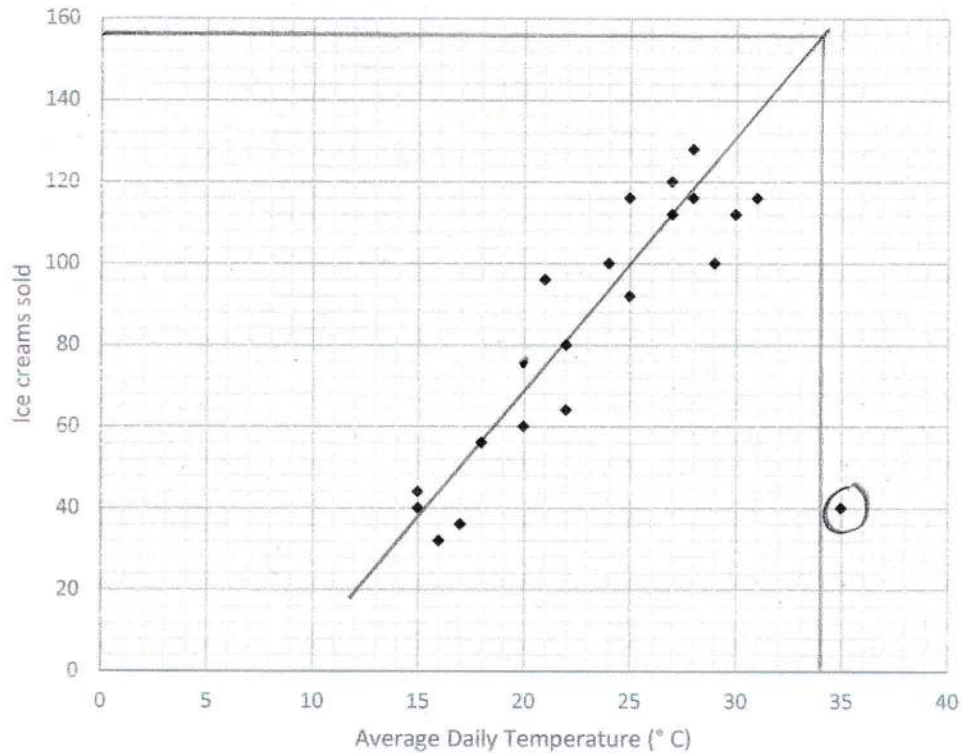
(c) Describe the correlation of your scatter graph.

positive

2.

The scatter graph below shows the average daily temperatures (in °C) and the number of ice creams sold by an ice cream van over 20 days in June.

- (a) On the 1<sup>st</sup> of July, the average temperature was 20 °C and 76 ice creams were sold.  
Plot this additional data point onto the scatter graph.



- (b) Circle the outlier in the data.

- (c) What was the average temperature on the day when the most ice creams were sold?

28°C

- (d) Describe the correlation of the scatter graph.

positive

- (e) Describe the relationship between the average daily temperature and the number of ice creams sold.

As the average daily temperature increases,  
so does the number of ice creams sold.

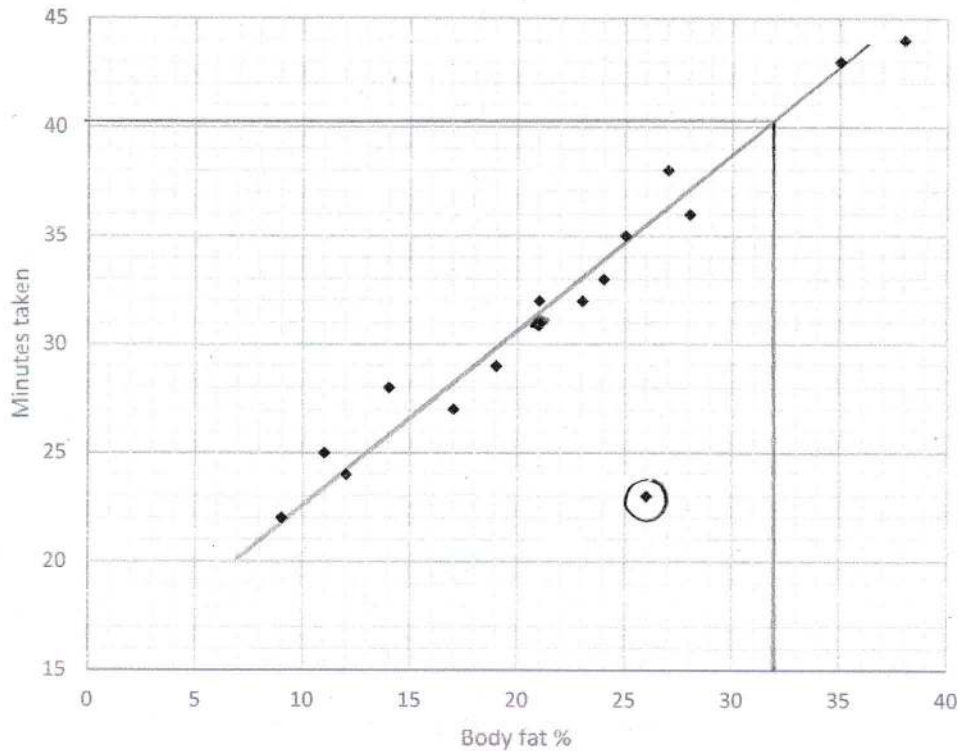
- (f) Use the scatter graph to estimate the number of ice creams that would be sold when the average daily temperature is 34 °C.

156 ice creams

3.

The scatter graph below shows the body fat percentage of a group of people and how many minutes it took them to run 5 kilometres.

(a) Freddie has a body fat percentage of 22% and took 31 minutes. Plot this additional data point onto the scatter graph.



(b) Circle the outlier in the data.

(c) What was the quickest time?

22 minutes

(d) How many people ran 5 kilometres in less than half an hour?

7

(e) Describe the correlation of the scatter graph.

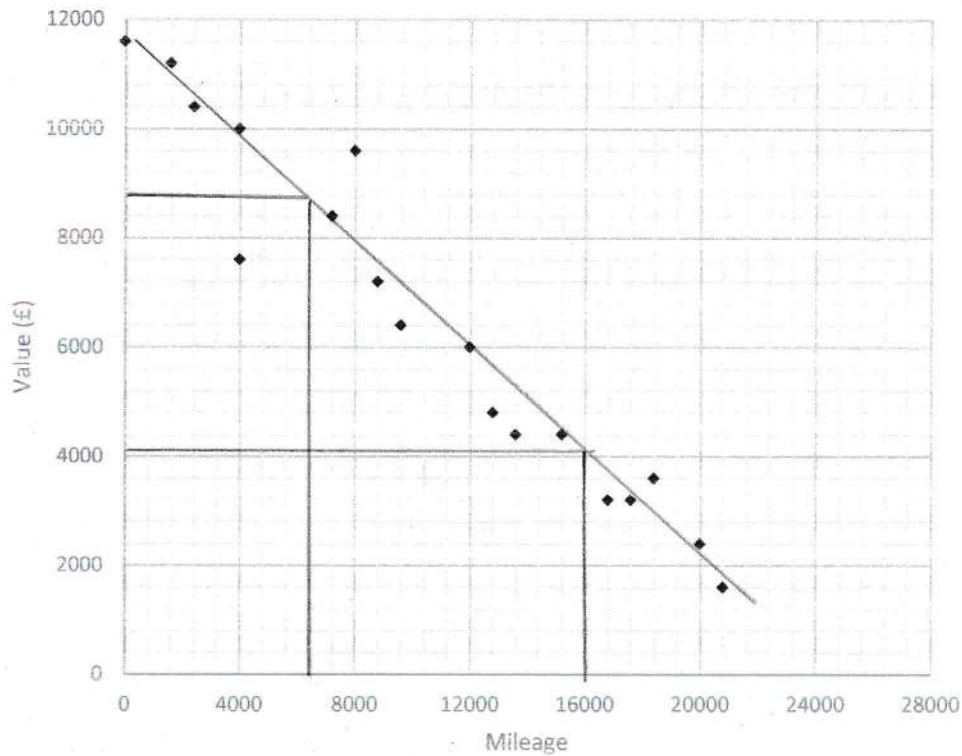
positive.

(f) Greg has a body fat percentage of 32%. Use the graph to estimate how many minutes Greg would run 5 kilometres in.

40 minutes

4.

The scatter graph below shows the values and mileages of 18 Volkswagen Polos.



(a) Describe the relationship between value and mileage.

As the mileage increases, the value decreases.

(b) Use the graph to estimate the value of a Volkswagen Polo with a mileage of 16,000.

£4,000

(c) Use the graph to estimate the mileage of a Volkswagen Polo that has a value of £8,800.

6,400 miles

(d) Explain why it might not be appropriate to use the graph to estimate the value of a Volkswagen Polo with a mileage of 27,200.

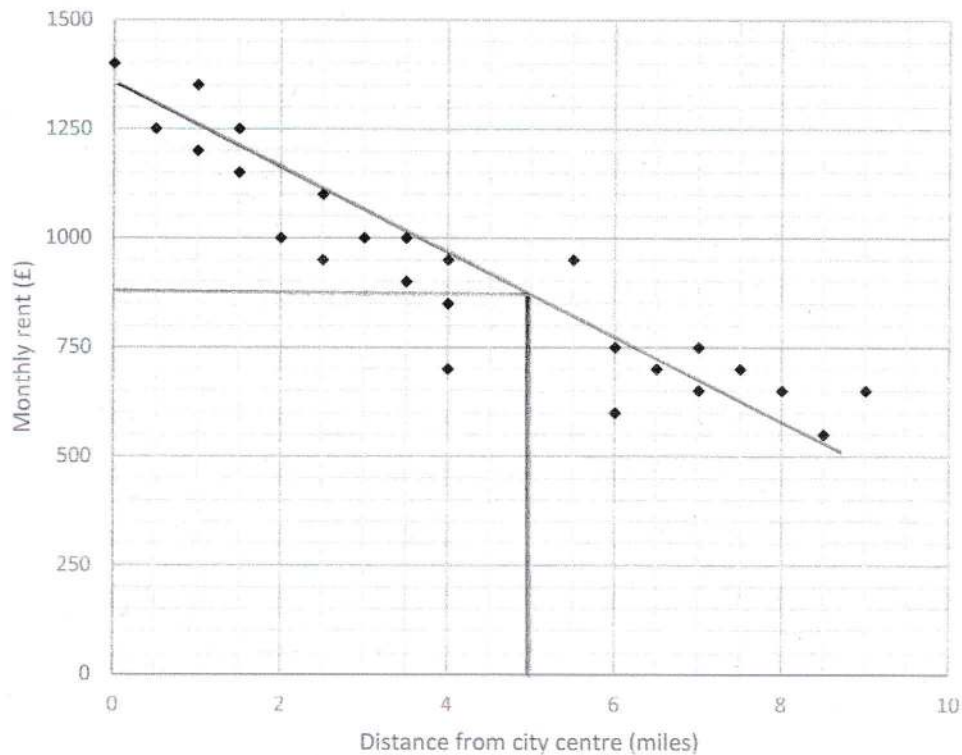
Because either

- the graph would predict a value less than zero
- the data does not include any cars with a mileage above 20,800 miles, so there is no evidence as to what happens to the value after this point.



5.

The scatter graph below shows the monthly cost of rent for 25 flats in Bristol and their distance from the city centre (in miles).



(a) Describe the correlation of the graph.

negative

(b) Describe the relationship between monthly rent and distance from the city centre.

The closer to the city centre the flat is, the more expensive the monthly rent.

(c) How many of the 25 flats have a monthly rent of less than £800?

10

(d) Use the graph to estimate the monthly rent for a flat 5 miles from the city centre.

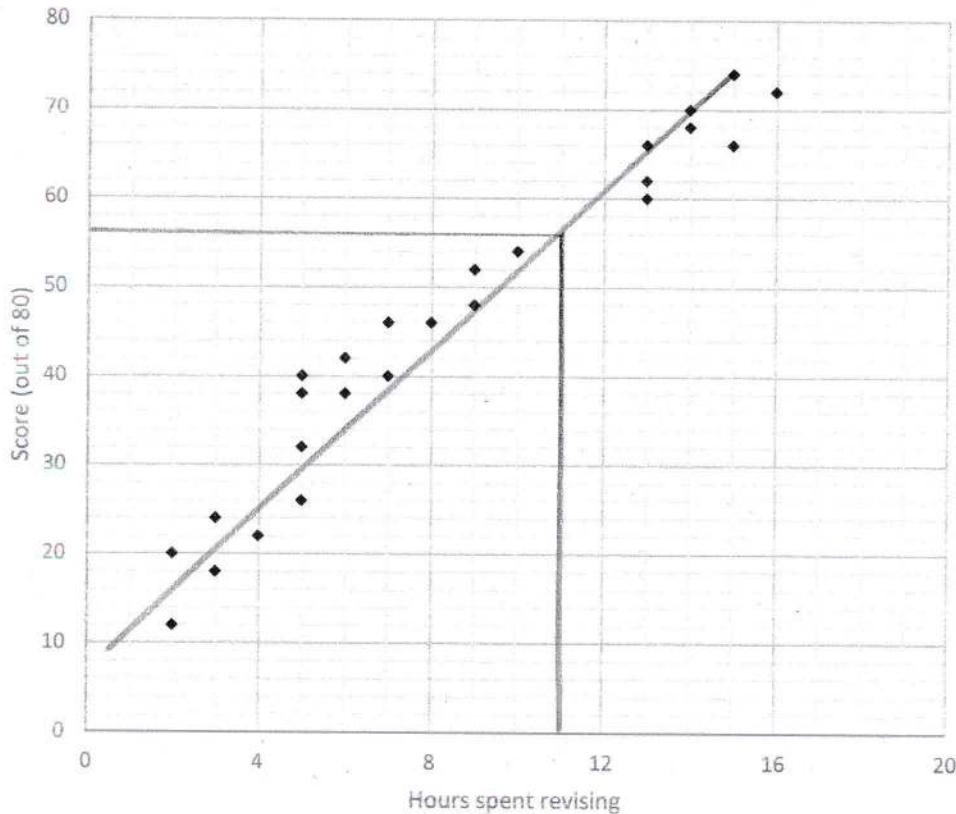
£875

6.

A class of 25 students took a maths test.

The scatter graph below shows the marks they scored in the test and the number of hours they spent revising.

The maths test was out of 80.



(a) Describe the relationship between the number of hours spent revising and marks scored.

The more time the student spent revising, the higher the mark they scored.

(b) The pass mark for the test was 30 out of 80. What percentage of the students failed the exam?

$$\frac{6}{25} \times 100 = \underline{24\%}$$

(c) Use the scatter graph to estimate the score a student would get if they spent 11 hours revising.

$$56/80$$

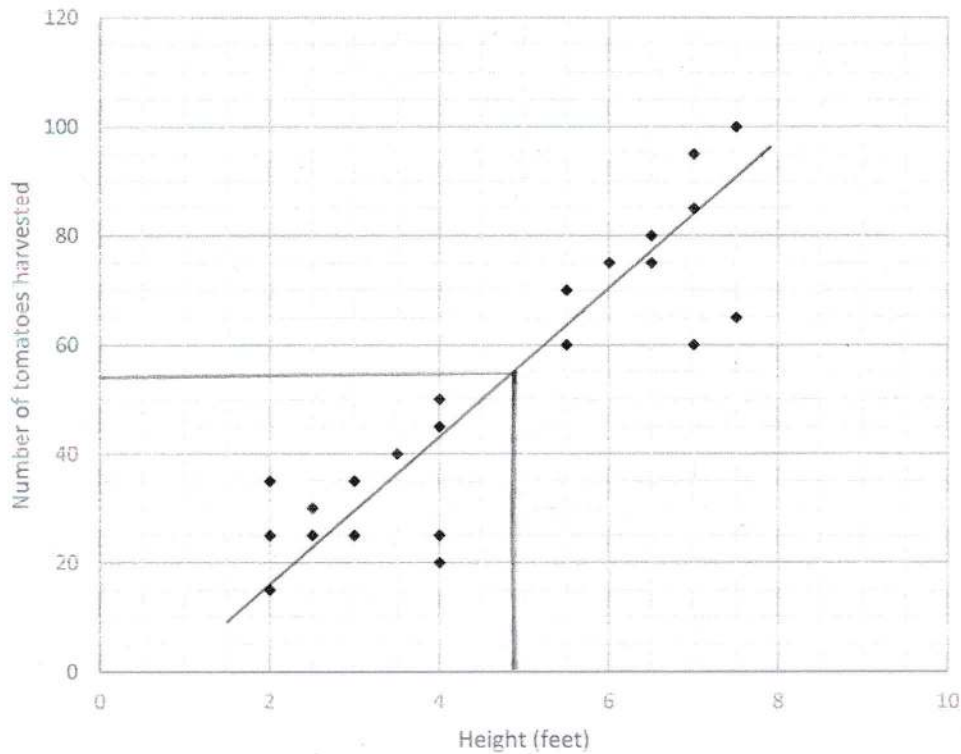
(d) Explain why it might not be appropriate to use the graph to estimate the score of a student who spent 19 hours revising.

Because either

- the graph would predict a mark higher than 80, which is impossible.
- the data does not include anybody who revised more than 16 hours, so there is no evidence as to what happens to the mark after this point.

7.

The scatter graph below shows the heights and number of tomatoes harvested by 22 tomato plants.



(a) Describe the relationship between height of plant and number of tomatoes harvested.

The higher the plant, the more tomatoes harvested.

(b) Find the range of the number of tomatoes harvested.

$$100 - 15 = \underline{85}$$

(c) Another plant harvested 55 tomatoes.

Use the graph to estimate the height of the plant.

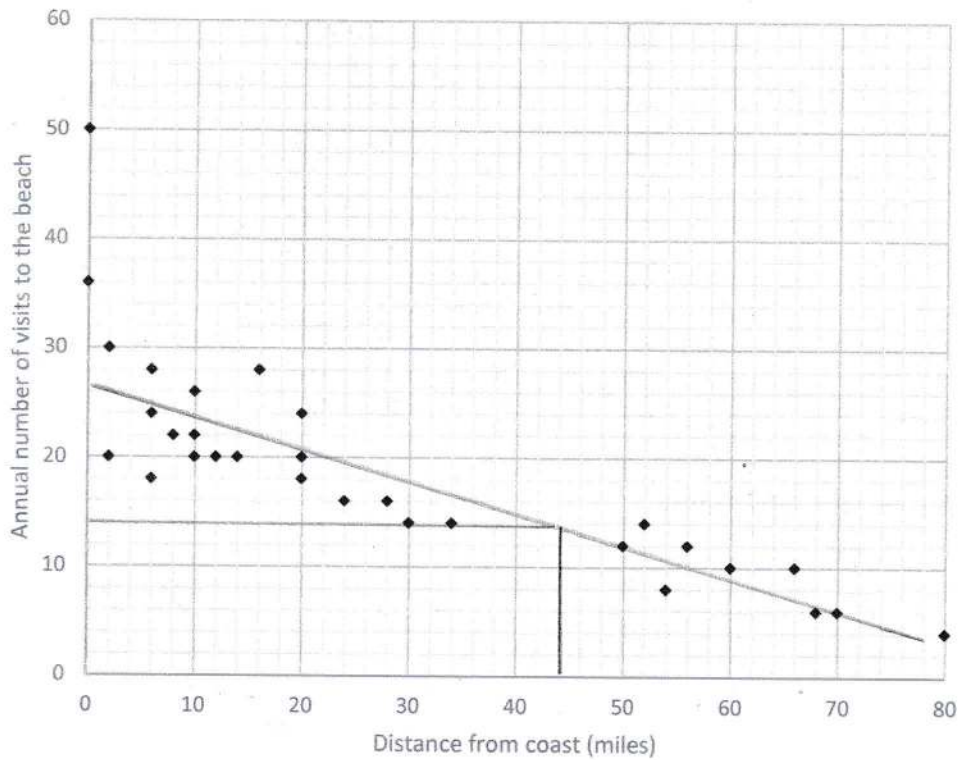
5 feet

(d) Explain why it might not be appropriate to use the graph to estimate the number of tomatoes harvested by a 10 foot plant.

Because there is no data for plants with a height above 7.5 feet, so there is no evidence as to what happens to the number of tomatoes harvested after this point.

8.

30 beach-goers were asked how many times they visited the beach over the last year. The scatter graph below shows this data compared to how many miles they live from the coast.



(a) Describe the correlation of the graph.

negative

(b) What percentage of the people live more than 45 miles from the coast?

$$\frac{9}{30} \times 100 = \underline{30\%}$$

(c) Martha lives 44 kilometres from the coast.

Use the graph to estimate how many times she visited the beach in the last year.

14 times