



National 5 Maths Line of Best Fit

SQA past paper and specimen paper
questions and answers by topic

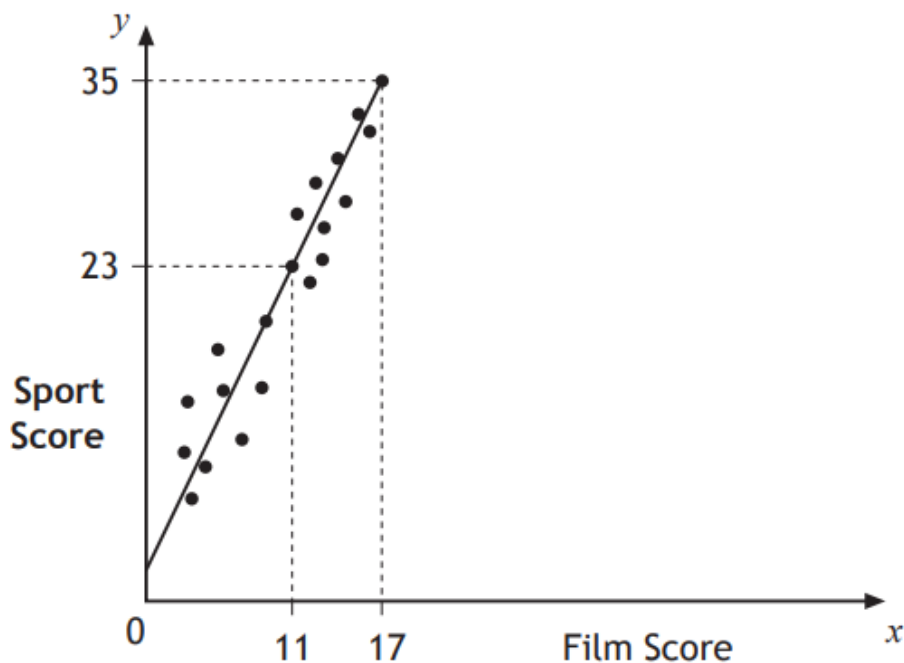
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Teams in a quiz answer questions on film and sport.
This scattergraph shows the scores of some of the teams.



A line of best fit is drawn as shown.

- (a) Find the equation of this straight line. 3
- (b) Use this equation to estimate the sports score for a team with a film score of 8. 1

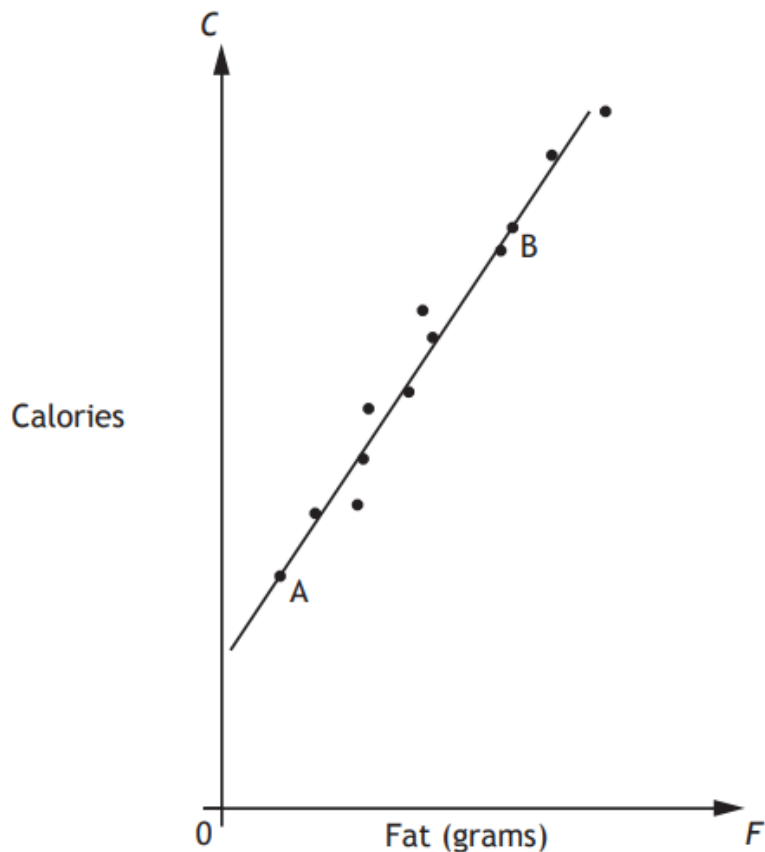
Answers:

- (a) $y = 2x + 1$ or equivalent
- (b) 17

National 5 Maths
SQA 2014 Paper 1
Question 6

McGregor's Burgers sells fast food.

The graph shows the relationship between the amount of fat, F grams, and the number of calories, C , in some of their sandwiches.



A line of best fit has been drawn.

Point A represents a sandwich which has 5 grams of fat and 200 calories.

Point B represents a sandwich which has 25 grams of fat and 500 calories.

(a) Find the equation of the line of best fit in terms of F and C . 3

(b) A Super Deluxe sandwich contains 40 grams of fat.

Use your answer to part (a) to estimate the number of calories this sandwich contains.

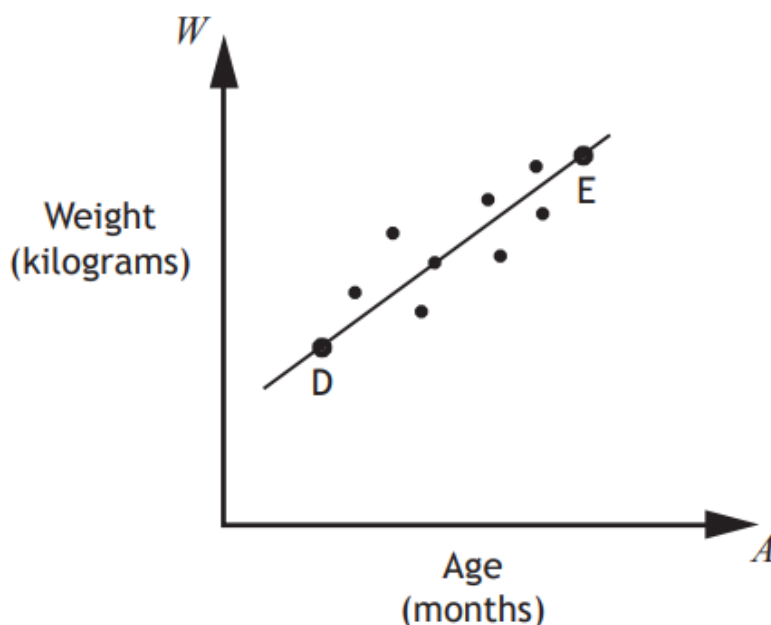
Show your working. 1

Answers: (a) $C = 15F + 125$ (b) 725 calories



A cattle farmer records the weight of some of his calves.

The scattergraph shows the relationship between the age, A months, and the weight, W kilograms, of the calves.



A line of best fit is drawn.

Point D represents a 3 month old calf which weighs 100 kilograms.

Point E represents a 15 month old calf which weighs 340 kilograms.

(a) Find the equation of the line of best fit in terms of A and W .

Give the equation in its simplest form.

3

(b) Use your equation from part (a) to estimate the weight of a one year old calf.

Show your working.

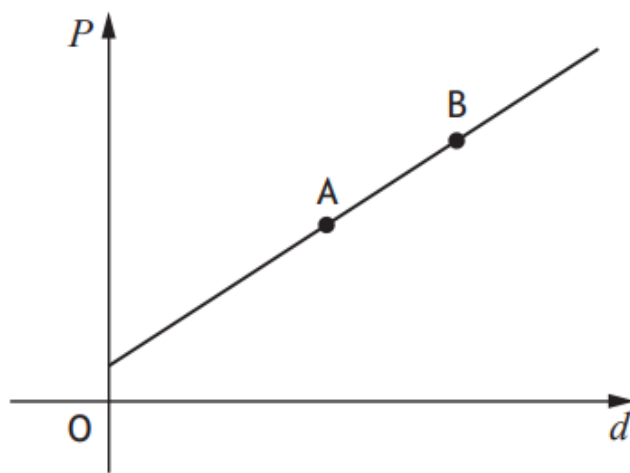
1

Answers: (a) $W = 20A + 40$ or equivalent (b) 280 kg



The cost of a journey with Tom's Taxis depends on the distance travelled.

The graph below shows the cost, P pounds, of a journey with Tom's Taxis against the distance travelled, d miles.



Point A represents a journey of 8 miles which costs £14.

Point B represents a journey of 12 miles which costs £20.

(a) Find the equation of the line in terms of P and d .

Give the equation in its simplest form.

3

(b) Calculate the cost of a journey of 5 miles.

1

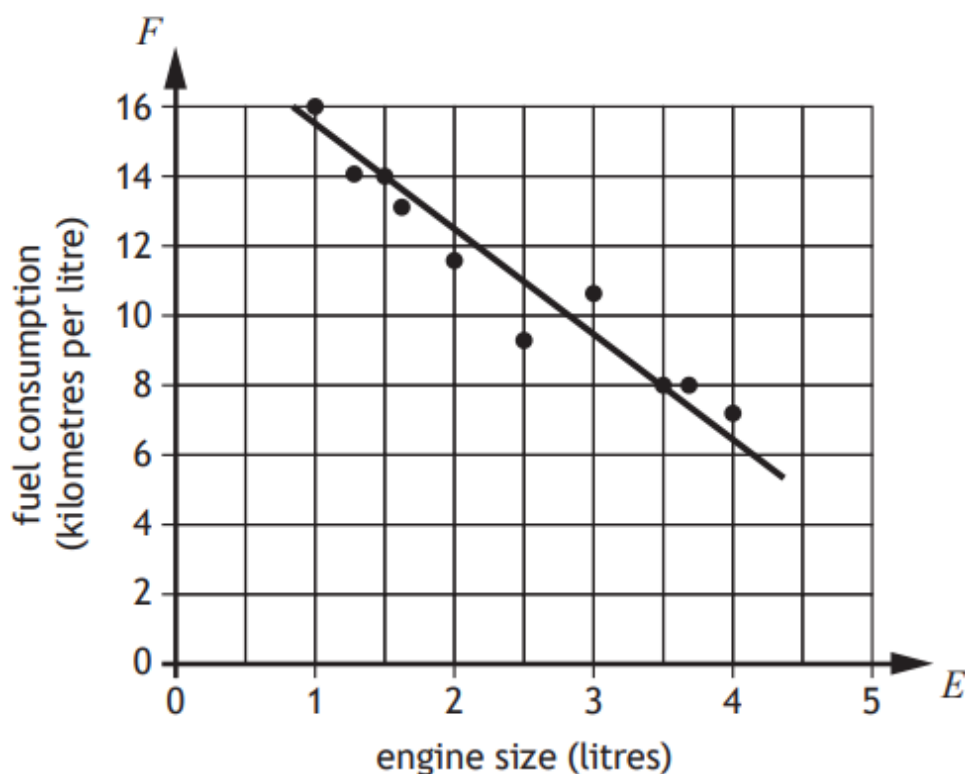
Answers:

(a) $P = \frac{3}{2}d + 2$ or $2P = 3d + 4$ or equivalent

(b) £9.50

The fuel consumption of a group of cars is recorded.

The scattergraph shows the relationship between the fuel consumption, F kilometres per litre, and the engine size, E litres, of the cars.



A line of best fit has been drawn.

(a) Find the equation of the line of best fit in terms of F and E .

Give the equation in its simplest form.

3

Amaar's car has an engine size of 1.1 litres.

(b) Use your equation from part (a) to estimate how many kilometres per litre he should expect to get.

1

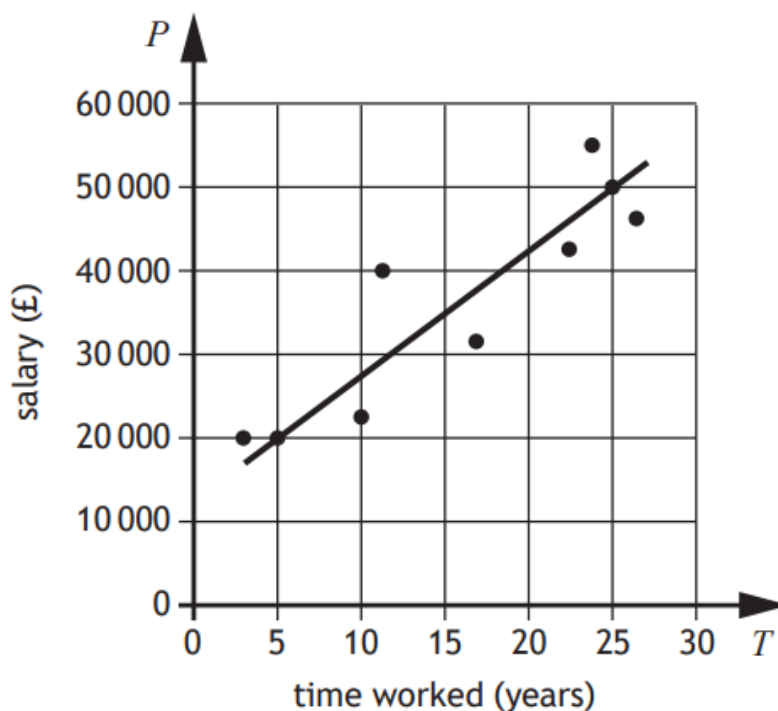
Answers: (a) $F = -3E + 18.5$ or equivalent (b) 15.2 km/litre

National 5 Maths
SQA 2023 Paper 1
Question 7



A business recorded the salaries of a sample of its employees and the length of time they have worked for the business.

The scattergraph shows the relationship between their salary, P pounds, and the length of time, T years, they have worked.



A line of the best fit has been drawn.

(a) Find the equation of the line of best fit in terms of P and T .

Give the equation in its simplest form.

3

(b) Use your equation from part (a) to estimate the salary of an employee who has worked for the business for 8 years.

1

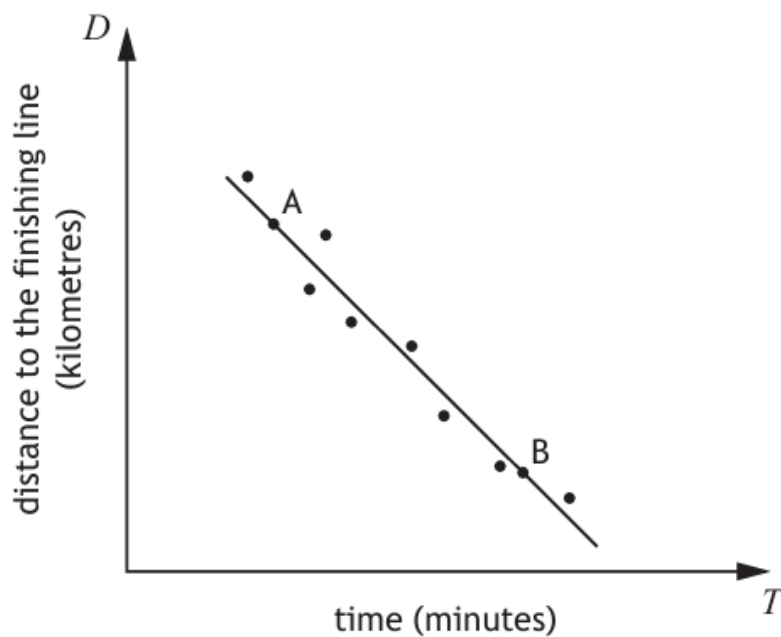
Answers:

(a) $P = 1500T + 12500$

(b) £24 500

In a car rally, competitors start at different times.

The scattergraph shows the relationship between the length of time they have been driving, T minutes, and the distance to the finishing line, D kilometres.



A line of best fit has been drawn.

Point A represents a competitor who has been driving for 3 minutes and is 26 kilometres from the finishing line.

Point B represents a competitor who has been driving for 10 minutes and is 12 kilometres from the finishing line.

(a) Find the equation of the line of best fit in terms of D and T .

Give the equation in its simplest form.

3

Another competitor has been driving for 7 minutes.

(b) Use your equation from part (a) to estimate the distance the competitor is from the finishing line.

1

Answers: (a) $D = -2T + 32$ or equivalent (b) 18 km