National 5 Mathematics

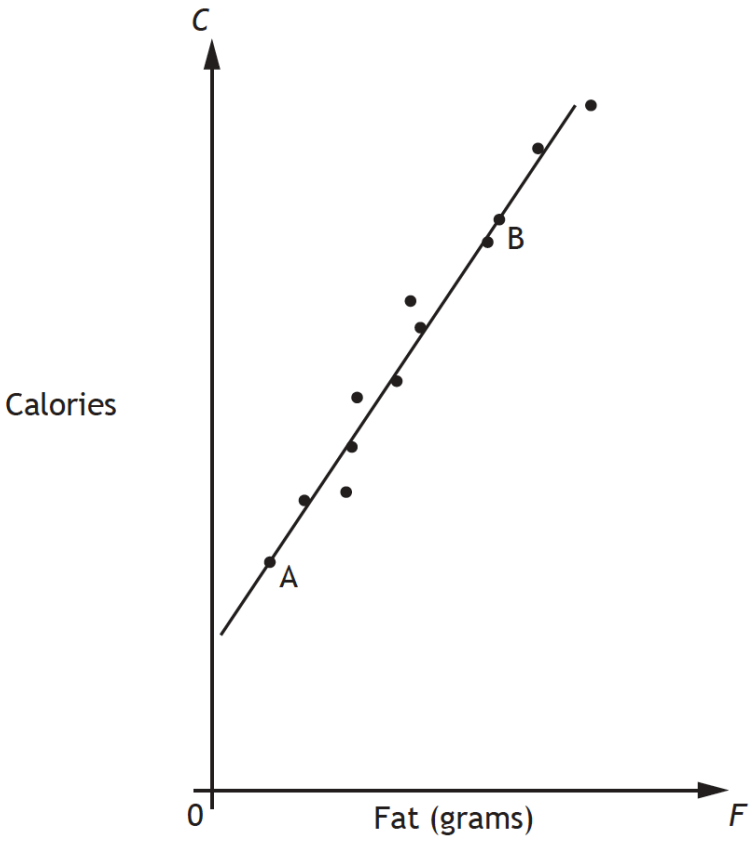
Straight Lines - **Questions** - 2014-2017

Marks are indicated in brackets after each question number

2014 Paper 1 Question 6, (3) (1)

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.

(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.

2014 Paper 1 Question 11, (2) (2)

(a) A straight line has equation $4x + 3y = 12$.

Find the gradient of this line.

(b) Find the coordinates of the point where this line crosses the x-axis.

2015 Paper 1 Question 8, (3)

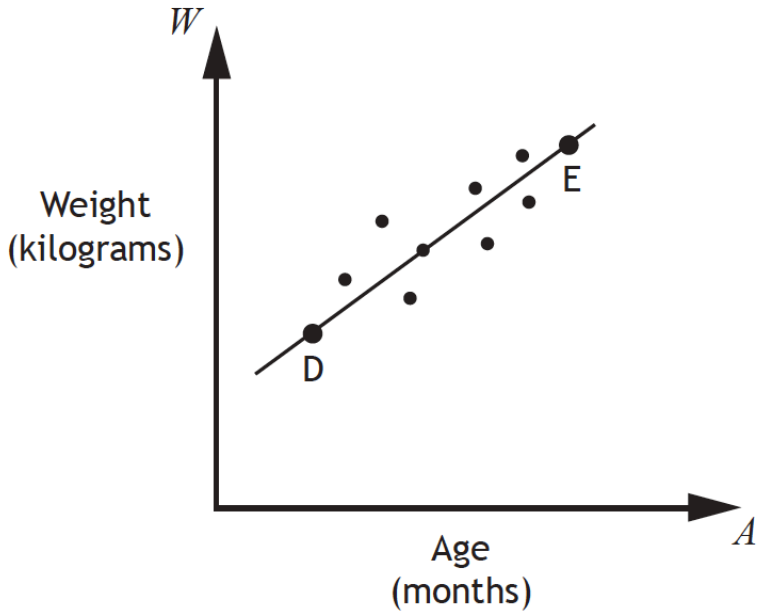
Find the equation of the line joining the points $(-2, 5)$ and $(3, 15)$.

Give the equation in its simplest form.

2016 Paper 1 Question 5, (3) (1)

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.

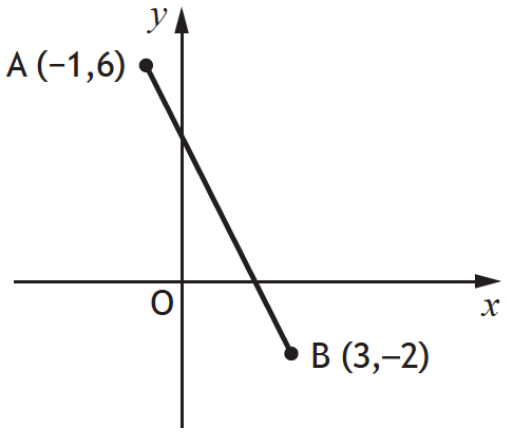
Give the equation in its simplest form.

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

Show your working.

2017 Paper 1 Question 6, (3)

The diagram below shows the straight line joining points A and B.



Find the equation of the line AB.

Give the equation in its simplest form.

2017 Paper 2 Question 11, (2)

A straight line has equation $3x-5y-10=0$.

Find the gradient of this line.