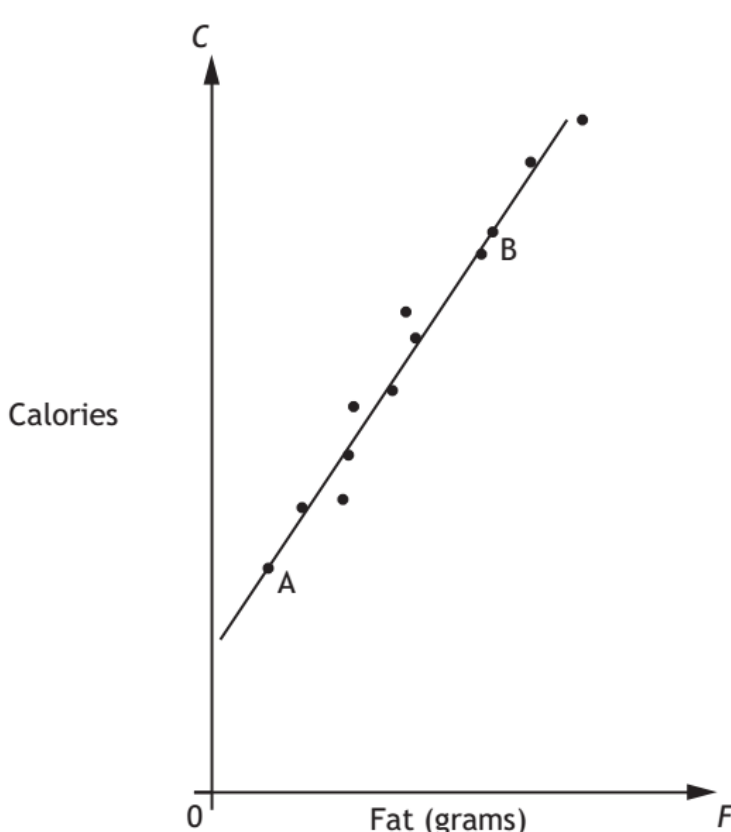


Straight Line

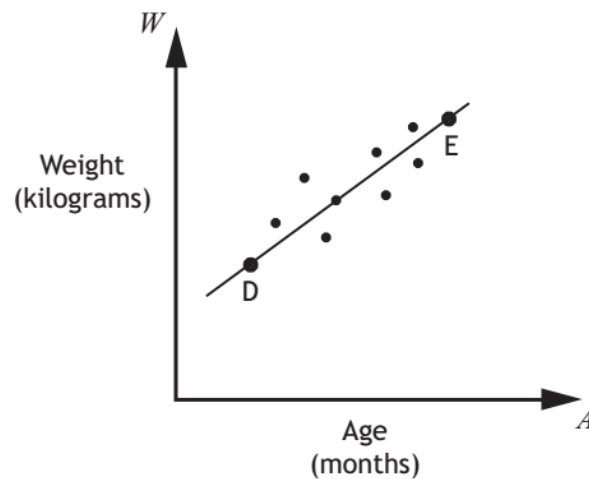
YEAR	PAPER	QUESTION
2014	1	<p>McGregor's Burgers sells fast food.</p> <p>The graph shows the relationship between the amount of fat, F grams, and the number of calories, C, in some of their sandwiches.</p> <div style="text-align: center;">  <p style="text-align: center;">Calories</p> <p style="text-align: center;">Fat (grams)</p> </div> <p>A line of best fit has been drawn.</p> <p>Point A represents a sandwich which has 5 grams of fat and 200 calories.</p> <p>Point B represents a sandwich which has 25 grams of fat and 500 calories.</p> <p>(a) Find the equation of the line of best fit in terms of F and C. 3</p> <p>(b) A Super Deluxe sandwich contains 40 grams of fat.</p> <p style="padding-left: 40px;">Use your answer to part (a) to estimate the number of calories this sandwich contains.</p> <p style="padding-left: 40px;">Show your working. 1</p>
2014	1	<p>(a) A straight line has equation $4x + 3y = 12$.</p> <p style="padding-left: 40px;">Find the gradient of this line. 2</p> <p>(b) Find the coordinates of the point where this line crosses the x-axis. 2</p>
2015	1	<p>Find the equation of the line joining the points $(-2, 5)$ and $(3, 15)$.</p> <p>Give the equation in its simplest form. 3</p>

2016

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.

3

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

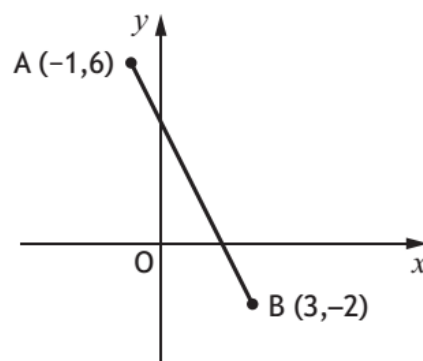
Show your working.

1

2017

1

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.

3

2017

2

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

Find the gradient of this line.

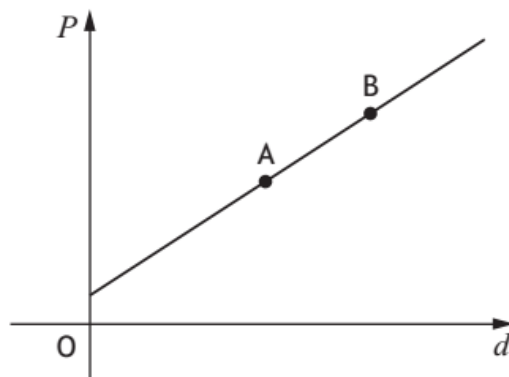
2

2018

1

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

2018

2

A straight line has equation $2x - 5y = 20$.

Find the coordinates of the point where this line crosses the y -axis.

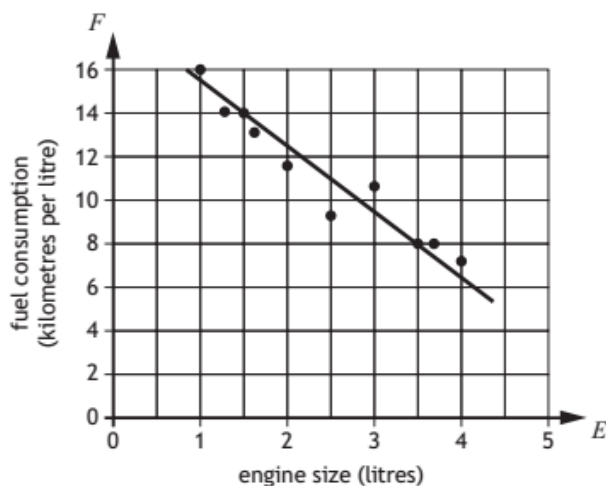
2

2019

1

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

2019	2	<p>Find an expression for the gradient of the line joining point A(6,9) to point B($4p, 4p^2$).</p> <p>Give your answer in its simplest form.</p> <p style="text-align: right;">3</p>
2022	1	<p>Find the equation of the line passing through the points $(-3, -1)$ and $(-5, 7)$.</p> <p>Give the equation in its simplest form.</p> <p style="text-align: right;">3</p>