OCR
RECOGNISING ACHIEVEMENT

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
General Certificate of Secondary Education

MATHEMATICS SYLLABUS A 1962/1

PAPER 1 (Foundation Tier)

Monday **5 JUNE 2006** Afternoon 1 hour 30 minutes

Candidates answer on the question paper.
Additional materials:
Geometrical instruments
Tracing paper (optional)

Candidate Name	Centre Number	Candidate Number

TIME 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

- Write your name in the space above.
- Write your Centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers, in blue or black ink, in the spaces provided on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Show your working. Marks may be given for working that shows that you know how to solve the problem even if you get the answer wrong.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [ ] at the end of each question or part question.

WARNING

You are not allowed to use a calculator in this paper.

FOR EXAMINER'S USE

This question paper consists of 18 printed pages and 2 blank pages.

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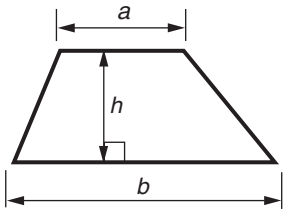
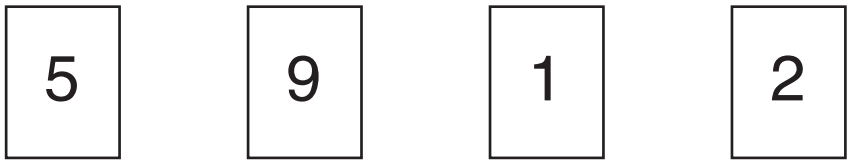
[Turn over

Formula Sheet: Foundation Tier

Area of trapezium = $\frac{1}{2}(a + b)h$



1 **(a)** Here are four number cards.



(i) Arrange the cards to make the smallest four digit number that you can.

(a)(i) _____[1]

(ii) Arrange the cards to make the largest four digit number that you can.

(ii) _____[1]

(b) In the number 23 485, the 4 has a value of **400**.

What is the value of

(i) the 8 in the number 23 485,

(b)(i) _____[1]

(ii) the 3 in the number 23 485?

(ii) _____[1]

2 **(a)** Work out.

400 – 216

.....

.....

.....

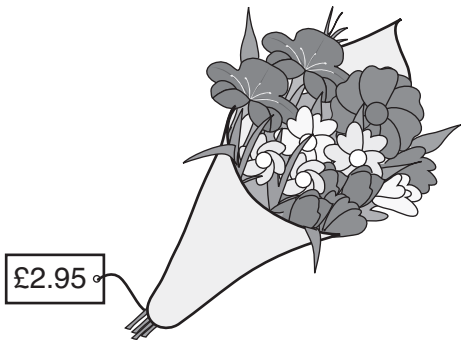
(a) _____[2]

(b) Write down a calculation that you could do in your head to **estimate** the answer to 102×5.9.

_____ × _____ = _____ [2]

(c) Richard has £15.
Bunches of flowers cost £2.95 each.

What is the greatest number of bunches of flowers Richard can buy?



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(c) _____[2]

3 **(a)** Draw a line which is 6.2 cm long.

[1]

(b) **(i)** Measure the length of the line PQ.

P ——————————————————— Q

(b)(i) _____cm

(ii) Mark, with a cross, the midpoint of the line PQ.

(iii) Draw a line which is parallel to the line PQ. [3]

(c)

R ——————————————————— S

(i) Draw a circle, radius 4 cm, with its centre at S.

(ii) Mark a point T on the circumference of the circle so that T is 7 cm from R.

(iii) Draw a line which is perpendicular to the line RS. [3]

4 Layla has sorted out her CD collection into sections.
The table shows how many CDs she has in each of the sections.

CD collection		
Pop (P)	■ ■ ■	60
Rock (R)	■ ▮	30
Bangra (B)	■ ■ ■ ■	
Garage (G)	■ ⌐	
Heavy Metal (H)		100
Classical (C)		25

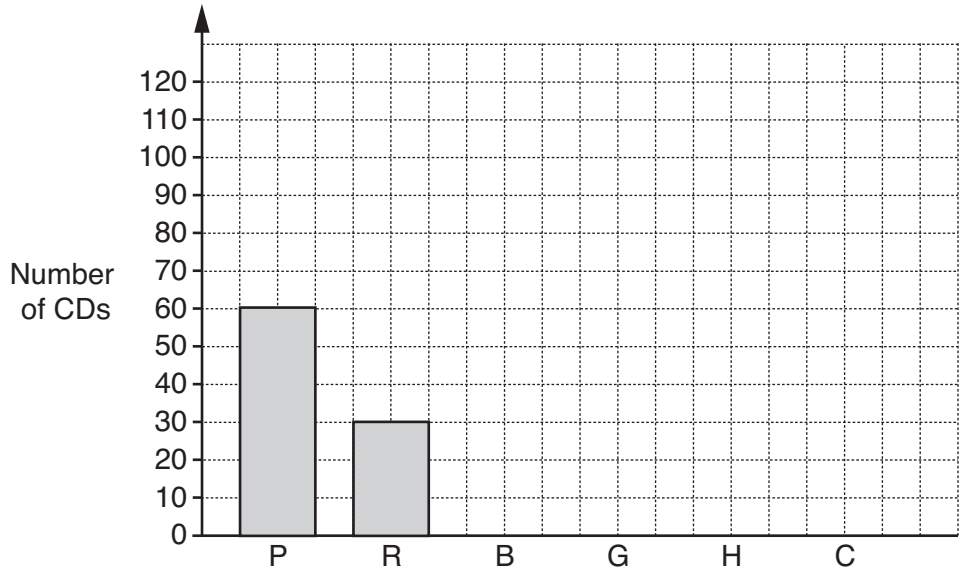
Key: ■ represents 20 CDs

(a) Complete the table with

(i) the numbers for Bangra and Garage, [2]

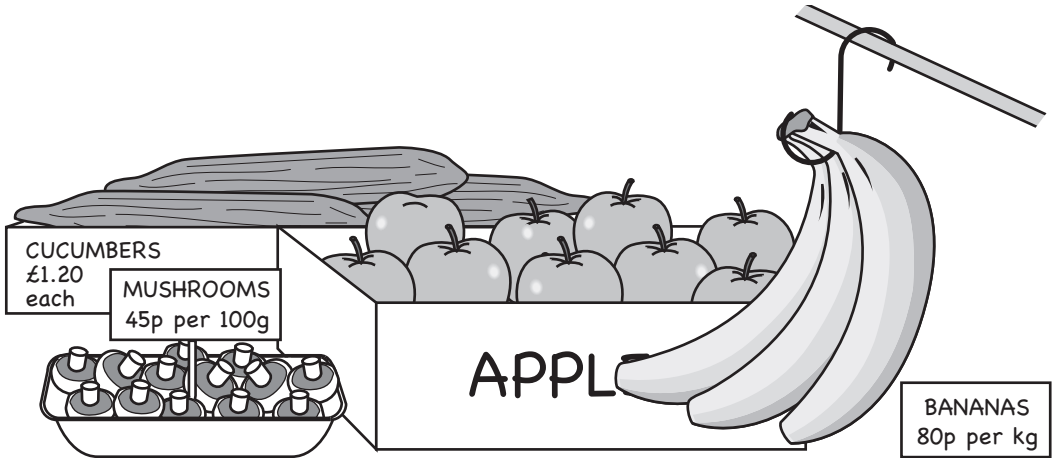
(ii) the symbols for Heavy Metal and Classical. [2]

(b) Complete the bar chart to illustrate the information shown in the table.



[2]

5 (a)



Safraz went to the fruit and vegetable shop.
This is part of his bill.

Fill in the five gaps in this bill.

.....

.....

.....

3 kilograms of bananas at 80p per kilogram.	_____
2 kilograms of apples at _____ per kilogram.	£2.50
Half a cucumber at £1.20 per cucumber.	_____
200 grams of mushrooms at 45p for 100 grams.	_____
TOTAL	£ _____

[5]

(b) Hannah buys 4 cans of cola at 60p each.
How much change should she get from £5 ?

.....

.....

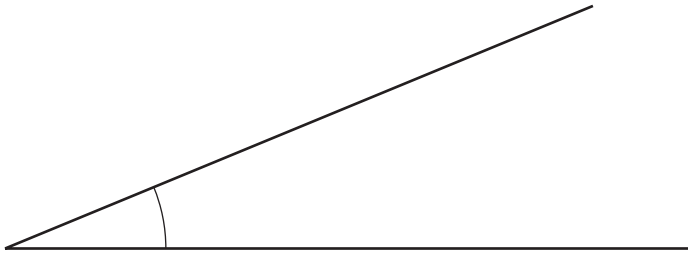
.....

(b) £ _____[2]

6 Choose one word from this list to describe each angle.
Give a reason for each answer.

Reflex	Acute	Right	Obtuse

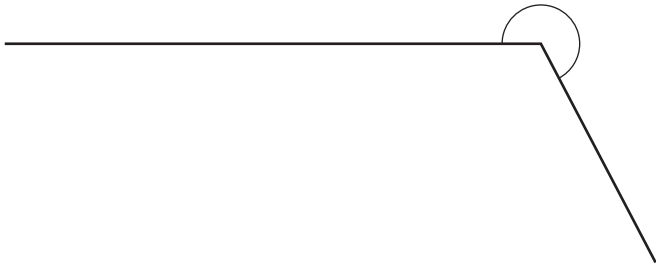
(a)



_____ angle because _____

_____[2]

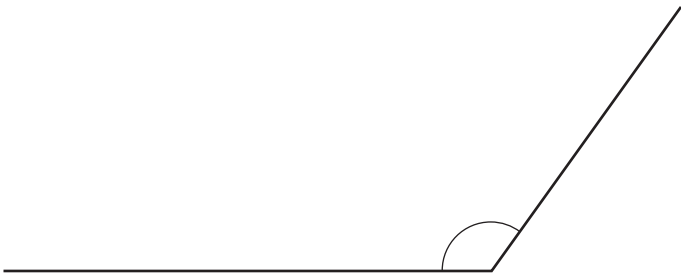
(b)



_____ angle because _____

_____[2]

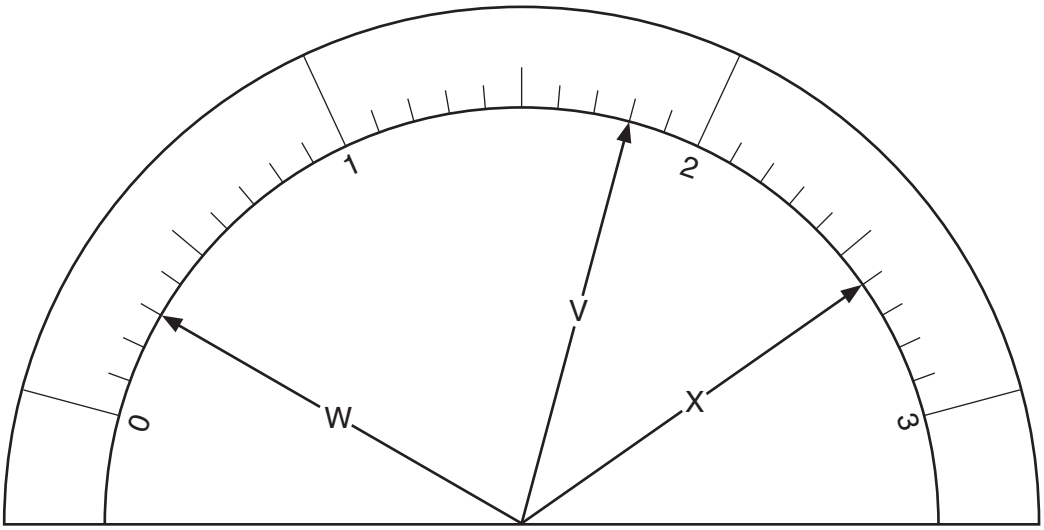
(c)



_____ angle because _____

_____[2]

7



The diagram shows a measuring scale.
The arrow V shows a reading of 1.8.

(a) Write down the reading shown by arrow X.

(a) _____[1]

(b) Write down the reading shown by arrow W.

(b) _____[1]

(c) How much greater is the reading of V than the reading of W?

.....

.....

(c) _____[1]

(d) On the diagram, draw an arrow Z to show a reading of 1.2. [1]

8 Temperatures were taken on one day in each of five cities.
The results are shown in the table.

City	Temperature at midnight	Temperature at midday
Bristol	2°C	9°C
Manchester	−2°C	8°C
Liverpool	−4°C	7°C
Norwich	3°C	8°C
York	−7°C	2°C

(a) Which city had the lowest temperature at **midnight**?

(a) _____[1]

(b) Which city had the greatest rise in temperature between midnight and midday?

.....

.....

(b) _____[1]

(c) Which city had the smallest rise in temperature between midnight and midday?

.....

.....

(c) _____[1]

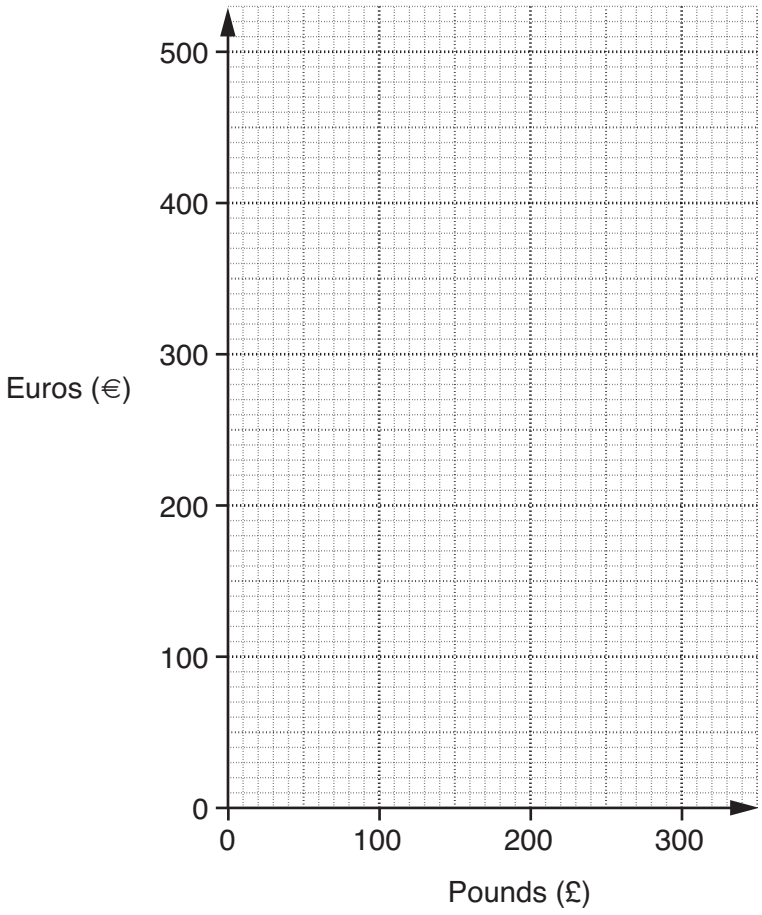
(d) Which of the five cities is being described here?

'Its temperature at midday is 6°C higher than the temperature in York and its temperature at midnight is 2°C higher than the temperature in Liverpool'.

(d) _____[1]

9 Tanya and Wayne go together to get their holiday money.
Tanya changes £100 into euros. She gets €140.
Wayne changes £210 into euros. He gets €294.

(a) Plot this information on the graph below, and join the points with a straight line to make a conversion graph.



[3]

(b) Use your graph to work out

(i) how many euros you would get for £250,

(b)(i) € _____ [1]

(ii) how many pounds you would get for €250.

(ii) £ _____ [1]

(c) Use your graph to help you work out how many euros you would get for £600.

Explain how you worked out your answer.

.....

.....

(c) € _____ [2]

10 **(a)** Simplify completely.

$$f + 2f + 4f$$

.....

(a) _____[1]

(b) Solve.

(i) $4x = 20$

.....

(b)(i) _____[1]

(ii) $x + 5 = 13$

.....

(ii) _____[1]

(c) Use the formula $P = 2L + 2W$ to work out

(i) the value of P when $L = 8$ and $W = 5$,

.....

.....

(c)(i) _____[2]

(ii) the value of W when $P = 30$ and $L = 6$.

.....

.....

.....

(ii) _____[3]

11 Work out.

(a) 0.6×0.3

.....

.....

(a) _____[1]

(b) 2×-5

(b) _____[1]

(c) $\frac{3}{5} \times \frac{1}{2}$

.....

.....

(c) _____[1]

(d) 8^2

.....

.....

(d) _____[1]

(e) 10^3

.....

(e) _____[1]

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12 A survey of the numbers of cars, vans and motorcycles parked in a small car park was carried out .
Some of the results are shown in the table below.

Fill in the six missing results.

	Cars	**Vans**	**Motorcycles**	**TOTAL**
Saturday	35	20		68
Sunday	12	0	15	
Monday	15			
TOTAL	62	25		150

[3]

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13 Here is a number machine.

(a) What is the OUTPUT when the INPUT is 4?

.....

.....

(a) _____[1]

(b) What is the INPUT when the OUTPUT is 8?

.....

.....

(b) _____[1]

(c) What is the OUTPUT when the INPUT is *n*?

.....

.....

(c) _____[2]

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14 It costs £15 to hire a paint sprayer for the **first** day and £3.50 for each extra day.

(a) Wendy hires a sprayer for 2 days.
How much does she pay?

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.....

(a) £ _____[1]

(b) Tony paid £50 to hire the sprayer.
For how many days did he hire it ?

.....

.....

(b) _____[3]

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15 A tutor group raised £200 for charity.

(a) Emma raised 15% of the £200.
How much did Emma raise?

.....

.....

(a) £ _____[2]

(b) Tariq raised £70.
What is 70 out of 200 as a percentage?

.....

.....

(b) _____% [2]

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16 A circular lawn has a radius of 10 metres.

Taking π as 3.1, work out the area of the lawn.
Give the units of your answer.

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_____[3]

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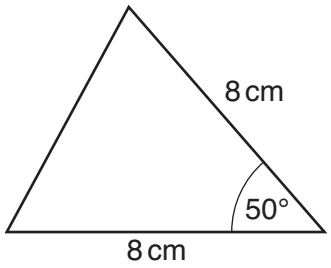
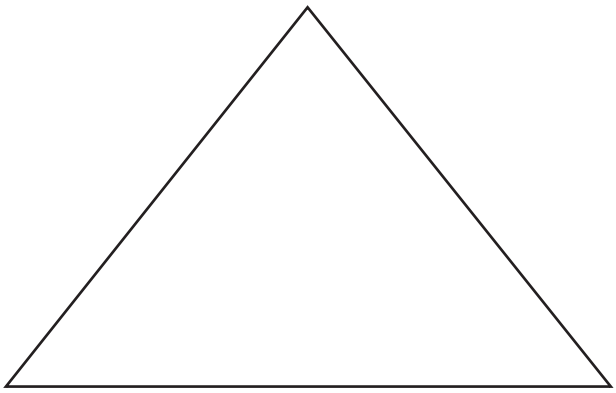
17 **(a)** Here is a sketch of a triangle.
Make an **accurate**, full-size drawing of the triangle.



NOT TO SCALE

[3]

(b) Here is a **different** triangle, drawn accurately.
Make some measurements, in centimetres, and use them to work out the area of the triangle.



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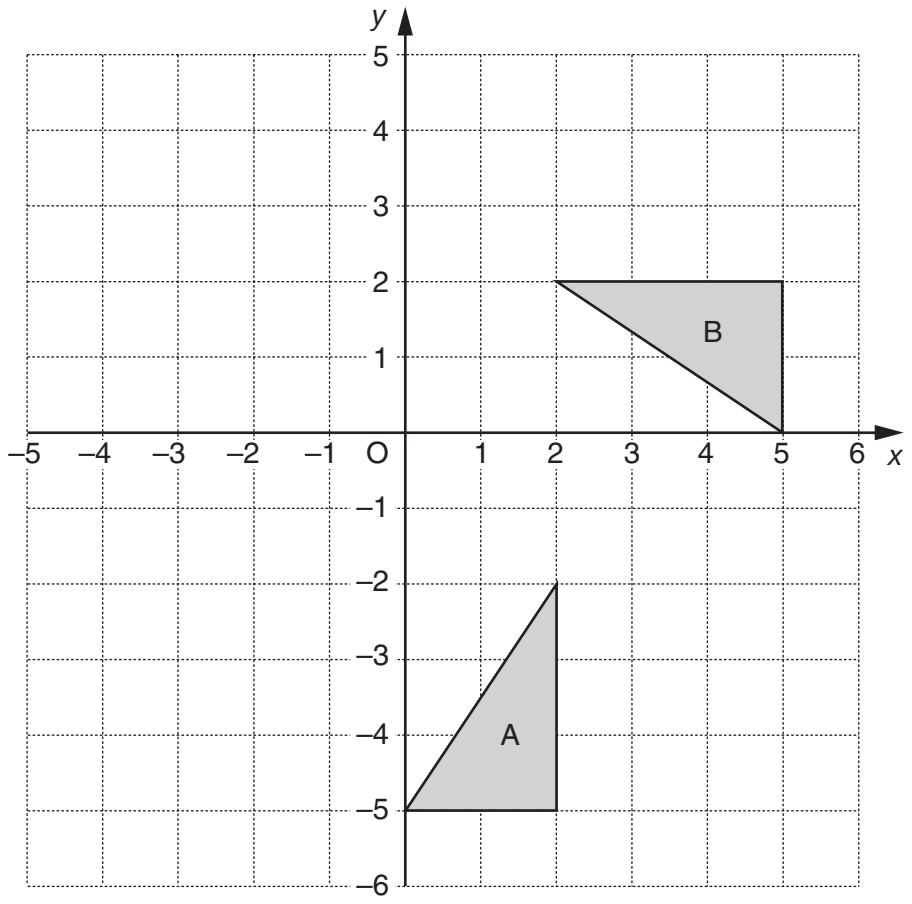
(b) _____ cm^2 [3]

18



(a) Translate **triangle A** by 4 squares to the left and 6 squares up.
Label the image P. [1]

(b) Reflect **triangle A** in the line $x = -1$.
Label the image Q. [2]

(c) Describe fully the **single** transformation that maps **triangle A** onto triangle B.

_____

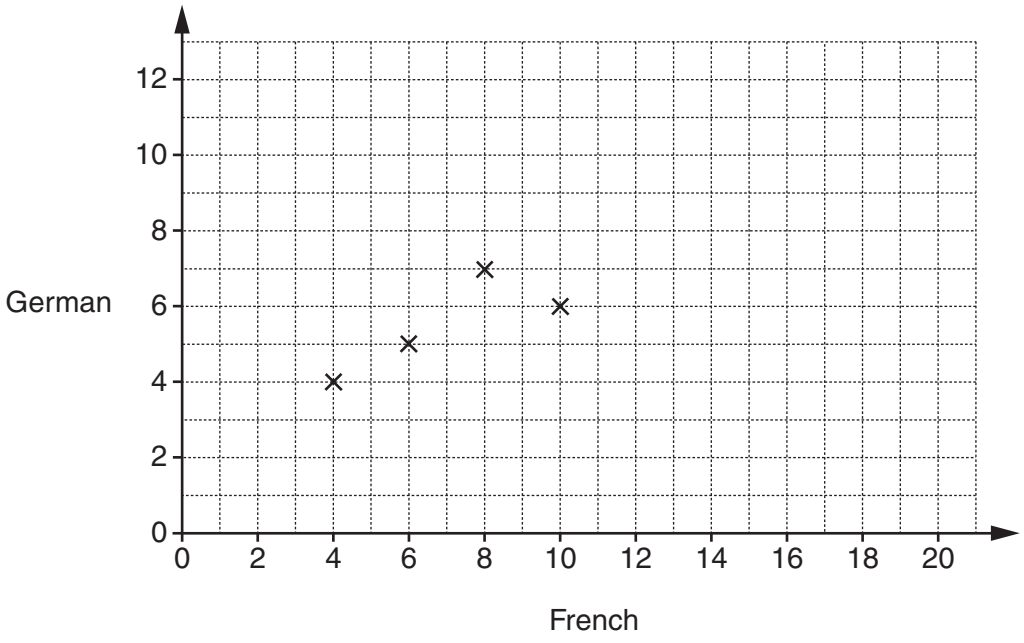
_____

_____[3]

19 The table shows the marks scored by a group of students in a French test and a German test.

Student	A	B	C	D	E	F	G	H	I
French	4	6	8	10	11	16	17	19	20
German	4	5	7	6	8	10	12	11	12

(a) On the grid below, draw a scatter diagram to show this information.
The first four points have been plotted for you.



[2]

(b) Describe the relationship between the two sets of marks.

_____[1]

(c) Draw a line of best fit on your scatter diagram. [1]

(d) Lucy scored 14 on the French test but missed the German test.
Use your graph to estimate how many marks you think she should have scored in the German test.

(d) _____[1]

(e) Farina scored 11 marks on the German Test.
She missed the French test and was given 10 marks by her teacher.
Do you think that was fair? Explain your answer.

_____ because _____

_____

_____[1]

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