Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						4	4	0	0	/	2	F	Signature	

Paper Reference(s)

4400/2F

Examiner's use only

Team Leader's use only

London Examinations IGCSE

Mathematics

Paper 2F

Foundation Tier

Tuesday 10 November 2009 – Morning

Time: 2 hours

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
Without sufficient working, correct answers may be awarded no marks.
You must NOT write on the formulae page. Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 23 questions in this question paper. The total mark for this paper is 100.
There are 24 pages in this question paper. Any blank pages are indicated.
You may use a calculator.

Advice to Candidates

Write your answers neatly and in good English.

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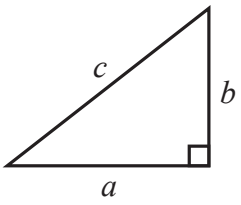
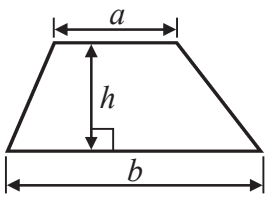
IGCSE MATHEMATICS 4400

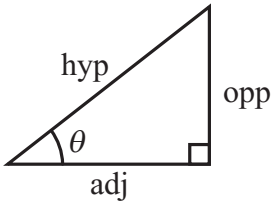
FORMULA SHEET – FOUNDATION TIER

Pythagoras' Theorem
$a^2 + b^2 = c^2$



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





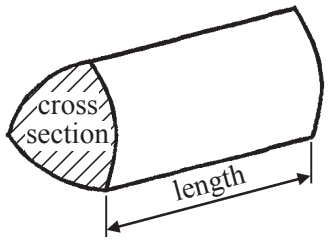
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

or $\sin\theta = \frac{\text{opp}}{\text{hyp}}$

$\cos\theta = \frac{\text{adj}}{\text{hyp}}$

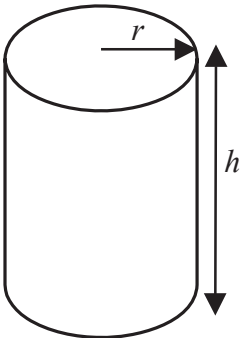
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



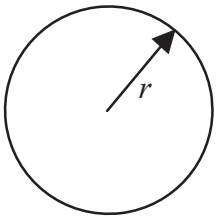
Circumference of circle = $2\pi r$

Area of circle = πr^2



Volume of cylinder = $\pi r^2 h$

Curved surface area of cylinder = $2\pi rh$



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Answer ALL TWENTY THREE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. The table shows the lengths of some rivers.

River	Length (km)
Huang He	4667
Mekong	4023
Amazon	6387
Nile	6690
Zaire	4371

(a) Write down the name of the longest river.

.....

(1)

(b) Write the number 4023 in words.

.....

(1)

(c) Write down the value of the 3 in the number 6387

.....

(1)

(d) Write the number 4371 correct to the nearest thousand.

.....

(1)

(e) Write the number 4667 correct to the nearest hundred.

.....

(1)

(f) How much longer is the River Nile than the River Amazon?

..... km

(1)

Leave blank

The Amazon rain forest covers $\frac{2}{5}$ of Brazil.

(g) Write $\frac{2}{5}$ as

(i) a decimal,

.....

(ii) a percentage.

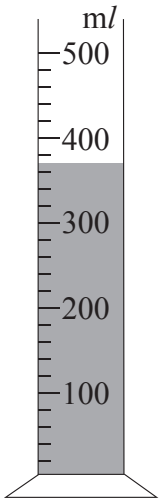
..... %

(2)

Q1

(Total 8 marks)

2. (a)

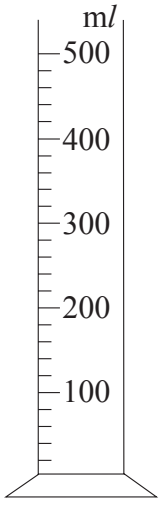


Write down the reading on this scale.

..... m*l*

(1)

(b)



(i) On this scale, show the reading 180 m*l*.

(ii) Change 180 m*l* to litres.

..... litres

(2)

(c) Change 2.5 litres to millilitres.

..... m*l*

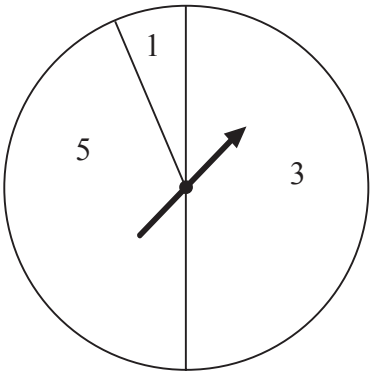
(1)

Q2

(Total 4 marks)

Leave blank

3. The diagram shows a pointer which spins about the centre of a fixed disc.



When the pointer is spun, it stops on one of the numbers 1 or 3 or 5
Jack spins the pointer once.

Certain	Likely	Unlikely	Impossible

(a) Write down the word from the box that best describes each outcome.

(i) the pointer will stop on 2

.....

(ii) the pointer will stop on an odd number

.....

(iii) the pointer will stop on 1

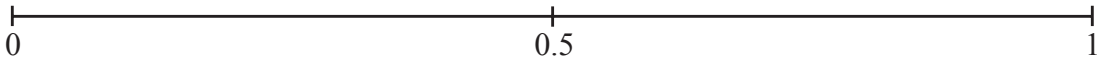
.....

(3)

(b) On the probability scale below, mark with a cross (X) the probability that

(i) the pointer will stop on 3
Label this cross T.

(ii) the pointer will stop on 5
Label this cross V.

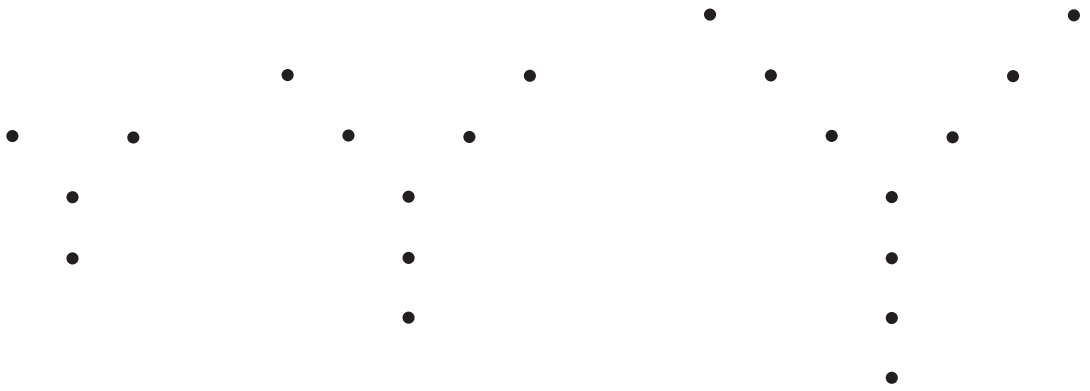


(2) **Q3**

(Total 5 marks)

Leave blank

4. Here are some patterns made from dots.



Pattern number 1 | Pattern number 2 | Pattern number 3

(a) Draw Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5	6
Number of dots	4	7	10			

(2)

(c) Work out the number of dots in Pattern number 12

.....

(2)

Leave blank

(d) The number of dots in Pattern number 20 is 61

(i) Work out the number of dots in Pattern number 19

.....

(ii) Explain how you found your answer.

.....

(2)

Q4

(Total 7 marks)

5. The table shows the temperature in Oslo every 4 hours during a day in March.

Time	00 00	04 00	08 00	12 00	16 00	20 00	24 00
Temperature	–2°C	–5°C	–4°C	–1°C	0°C	3°C	–1°C

(a) Write down the lowest temperature.

..... °C

(1)

(b) By how many degrees did the temperature rise between 08 00 and 12 00?

..... °C

(2)

(c) Work out the range of the temperatures.

..... °C

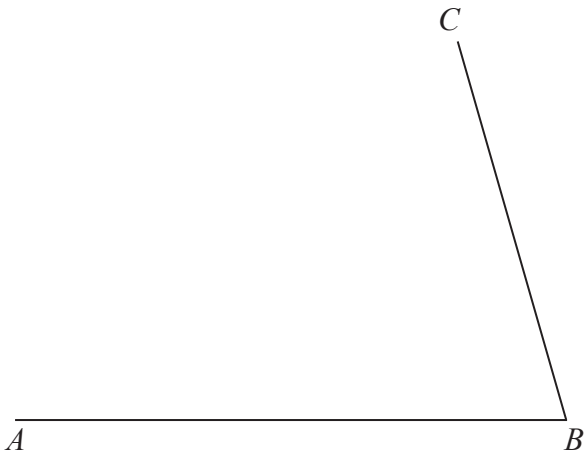
(2)

Q5

(Total 5 marks)

Leave blank

6.



(a) Measure the length of AB.

..... cm
(1)

(b) Measure the size of angle ABC.

°
.....
(1)

$ABCD$ is a quadrilateral.
D is a point such that angle $BAD = 117°$ and $CD = 9.1$ cm.

(c) On the diagram, complete quadrilateral $ABCD$.

(3) **Q6**

(Total 5 marks)

Leave blank

7. (a) Write $\frac{48}{60}$ as a fraction in its simplest form.

.....

(1)

(b) Work out $\frac{3}{7}$ of 42

.....

(2)

(c) Write these fractions in order of size.
Start with the smallest fraction.

$\frac{5}{6}$ $\frac{7}{8}$ $\frac{21}{25}$ $\frac{4}{5}$

.....

(2) **Q7**

(Total 5 marks)

Leave blank

8.

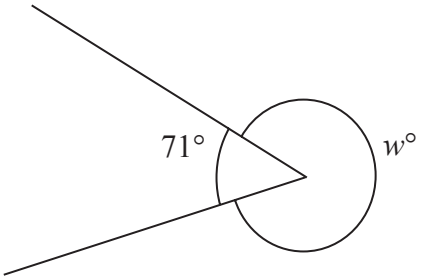


Diagram **NOT** accurately drawn

(a) (i) Work out the value of w.

$w =$ .....

(ii) Give a reason for your answer.

.....

(2)

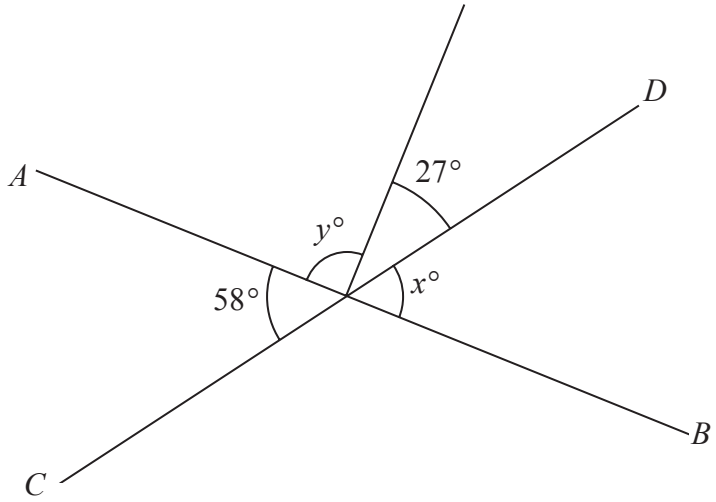


Diagram **NOT** accurately drawn

AB and CD are straight lines.

(b) Give a reason why $x = 58$

.....

(1)

(c) (i) Work out the value of y.

$y =$ .....

(ii) Give a reason for your answer.

.....

(2)

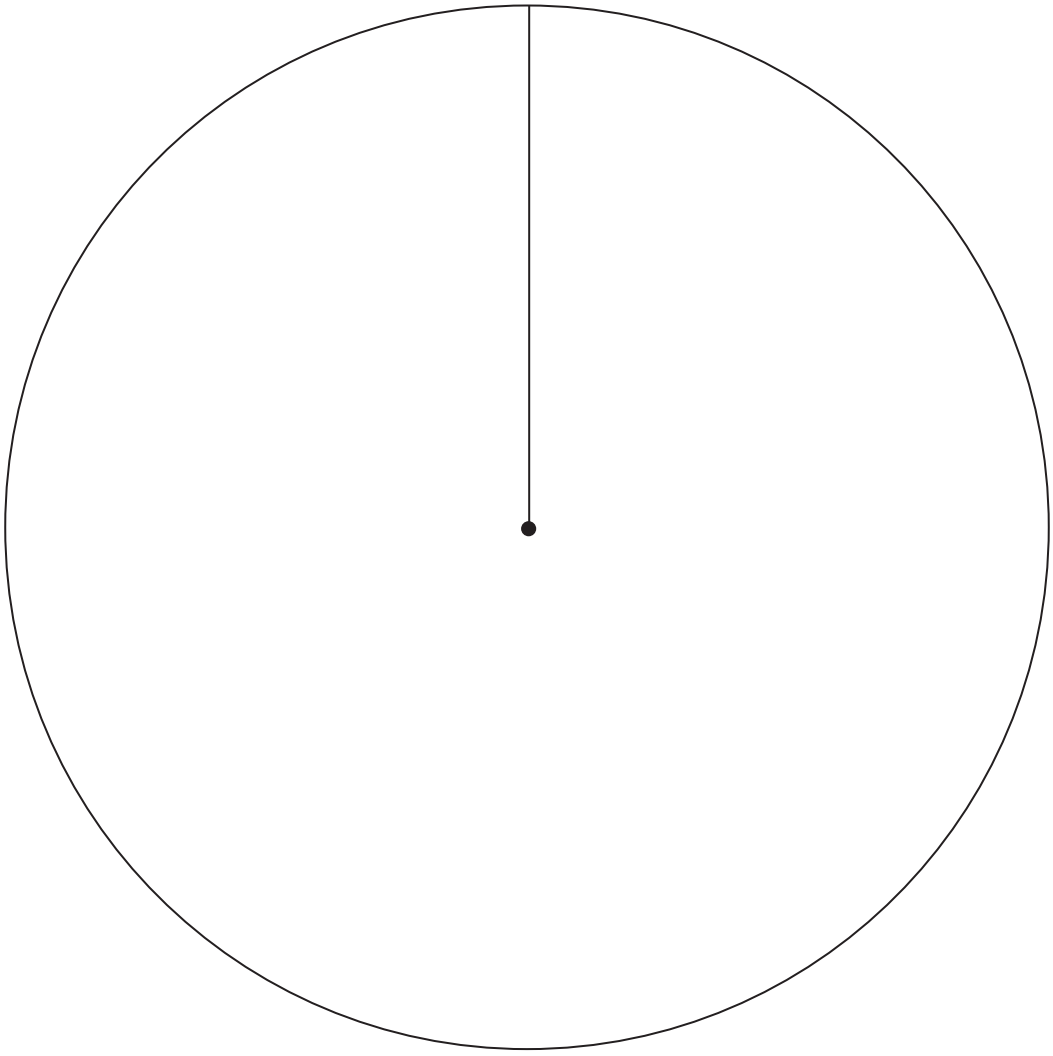
(Total 5 marks)

Q8

Leave blank

9. Last season, Mathstown Hockey Club played 48 matches.
They won 20 matches, drew 18 and lost 10

Draw a pie chart to show this information.



Q9

(Total 3 marks)

Leave blank

10. The diagram shows a trapezium with two equal sides.

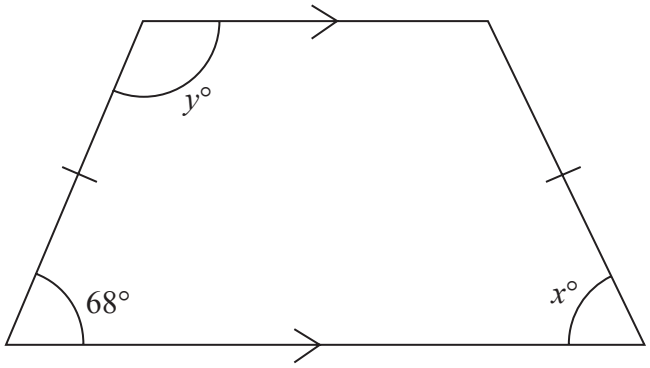


Diagram **NOT** accurately drawn

(a) Write down the value of x.

$x =$ .....

(1)

(b) Work out the value of y.

$y =$ .....

(2)

Q10

(Total 3 marks)

11.

£1 = 72.5 Indian rupees

(a) Change £86 to Indian rupees.

..... Indian rupees

(2)

(b) Change 8700 Indian rupees to pounds (£).

£ .....

(2)

Q11

(Total 4 marks)

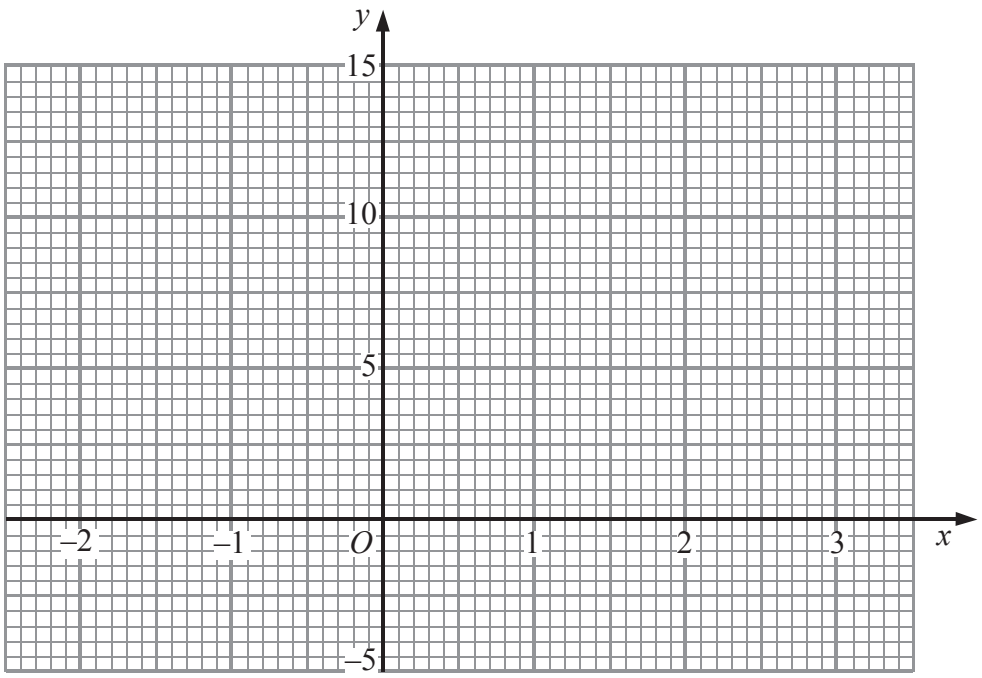
Leave blank

12. (a) Complete the table of values for $y = 3x + 4$

x	–2	–1	0	1	2	3
y	–2			7		

(2)

(b) On the grid, draw the graph of $y = 3x + 4$



(2) **Q12**

(Total 4 marks)

Leave blank

13. (a) Find the ratio of 24 seconds to 1 minute.
Give your answer in its simplest form.

.....

(2)

Carlos mixes cement, lime and sand in the ratios 1 : 2 : 9 by weight.

(b) Work out the weight of cement, the weight of lime and the weight of sand in 60 kg of the mixture.

cement ..... kg

lime ..... kg

sand ..... kg

(3)

Q13

(Total 5 marks)

14. Use your calculator to work out the value of $\frac{11.7+18.4^2}{0.3}$

Write down all the figures on your calculator display.

.....

Q14

(Total 2 marks)

Leave blank

15.

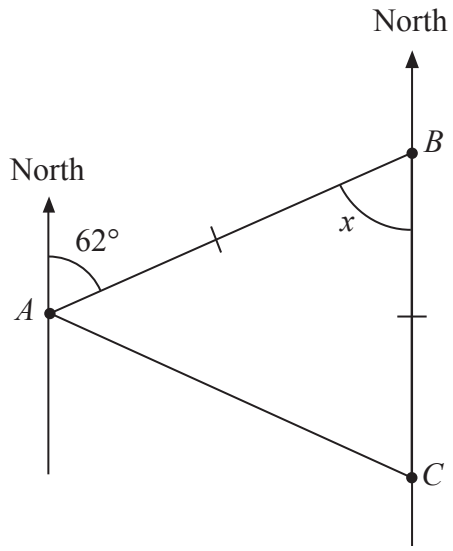


Diagram **NOT** accurately drawn

The bearing of B from A is 062°.
C is due south of B.
$AB = CB$.

(a) (i) Find the size of angle x.

.....°

(ii) Give a reason for your answer.

.....

(2)

(b) Work out the bearing of C from A.

.....°

(2)

Q15

(Total 4 marks)

Leave blank

16. A bag contains some beads.
The colour of each bead is red or green or blue.
Binita is going to take a bead at random from the bag.
The probability that she will take a red bead is 0.4
The probability that she will take a green bead is 0.5

(a) Work out the probability that she will take a blue bead.

.....
(2)

(b) There are 80 beads in the bag.
Work out the number of red beads in the bag.

.....
(2)

Q16

(Total 4 marks)

17. (a) Cheng invested 3500 dollars.
At the end of one year, interest of 161 dollars was added to his account.

Express 161 as a percentage of 3500

..... %
(2)

(b) Lian invested an amount of money at an interest rate of 5.2% per year.
After one year, she received interest of 338 dollars.

Work out the amount of money Lian invested.

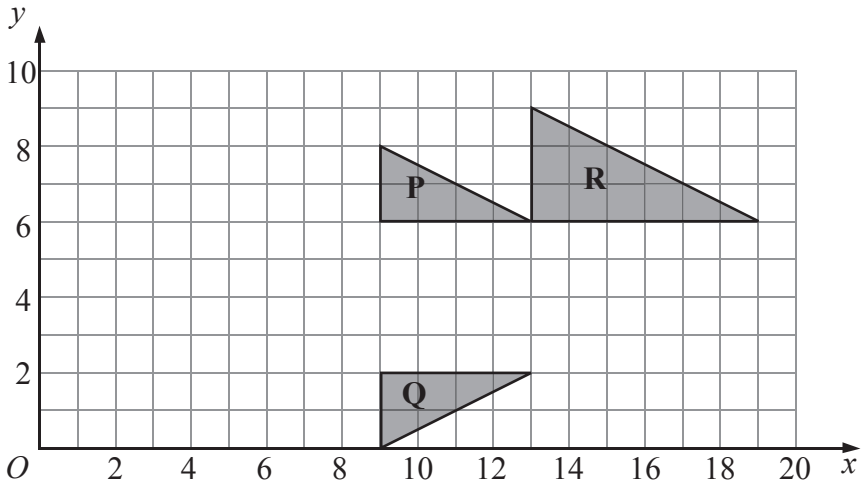
..... dollars
(3)

Q17

(Total 5 marks)

Leave blank

18.



(a) Describe fully the single transformation which maps triangle **P** onto triangle **Q**.

.....

(2)

(b) Describe fully the single transformation which maps triangle **P** onto triangle **R**.

.....

.....

(3) **Q18**

(Total 5 marks)

Leave blank

19. (a) Simplify $d \times d \times d \times d \times d$

.....

(1)

(b) Simplify $5x - 4y + 2 + 3x + y$

.....

(2)

(c) Factorise $n^2 - 4n$

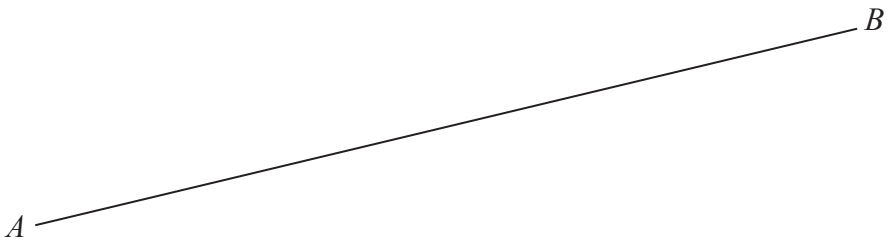
.....

(2)

Q19

(Total 5 marks)

20. Use ruler and compasses to construct the perpendicular bisector of the line AB.
You must show all construction lines.



Q20

(Total 2 marks)

Leave blank

21. The table shows information about the rainfall in Singapore in December one year.

Rainfall (d mm)	Number of days
$0 \leqslant d < 10$	23
$10 \leqslant d < 20$	3
$20 \leqslant d < 30$	2
$30 \leqslant d < 40$	3

Work out an estimate for the total rainfall in December.

..... mm

(Total 3 marks)

Q21

22. $T = \dfrac{n(1+e)}{(1-e)}$

Work out the value of T when $n = 8.6$ and $e = 0.2$

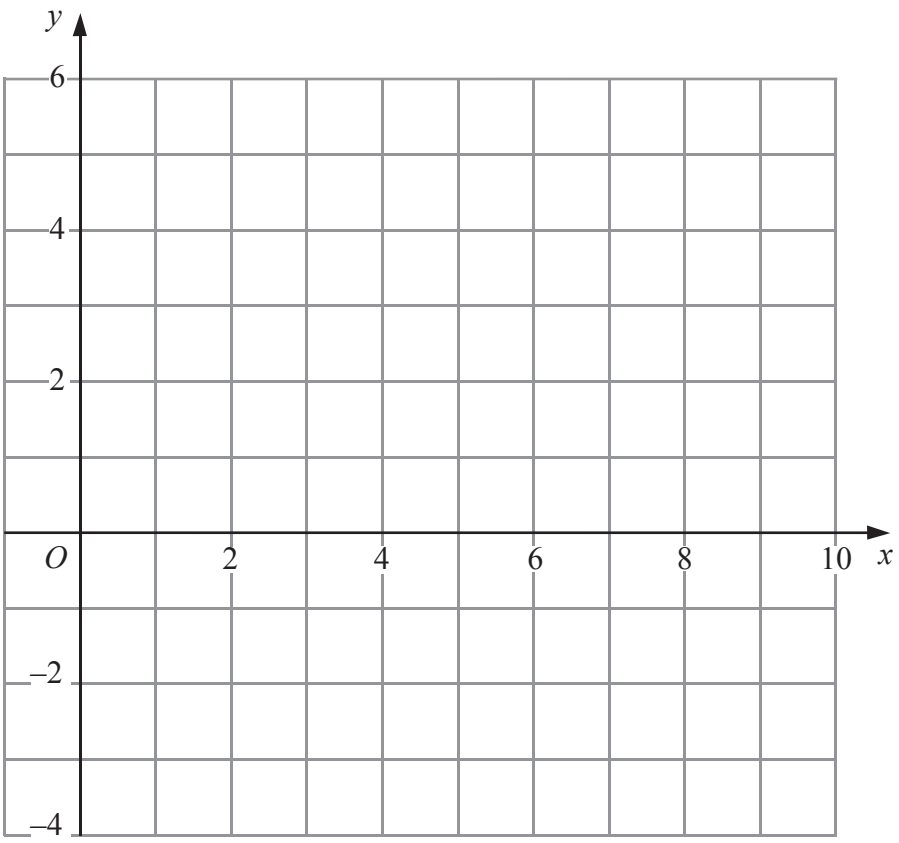
$T =$ .....

(Total 2 marks)

Q22

Leave blank

23. (a) On the grid, draw the graph of $2x - 3y = 6$ from $x = 0$ to $x = 9$



(2)

Leave blank

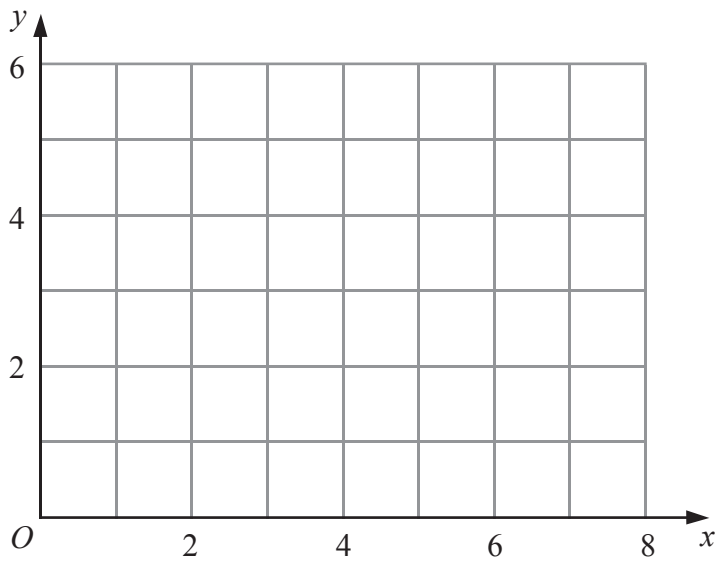
(b) On the grid, show by shading the region which satisfies the inequalities

$3 \leqslant x \leqslant 6$

and

$2 \leqslant y \leqslant 4$

Label your region **R**.



(3) **Q23**

(Total 5 marks)

TOTAL FOR PAPER: 100 MARKS

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