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 16 November 2010 – 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 20 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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H 3 7 8 0 6 A 0 1 2 0

Turn over

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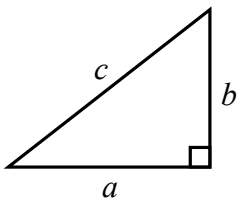
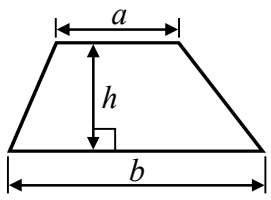
IGCSE MATHEMATICS 4400

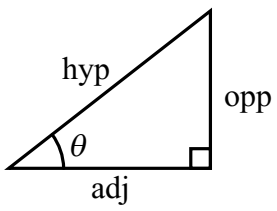
FORMULA SHEET – FOUNDATION TIER

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



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





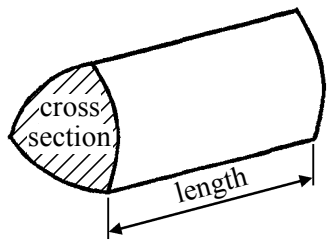
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

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

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

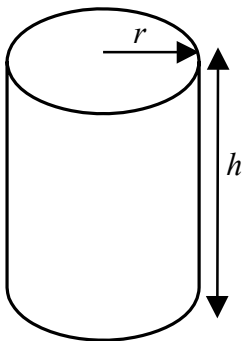
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



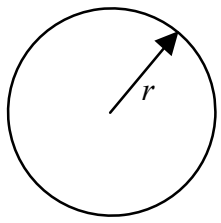
Circumference of circle = $2\pi r$

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. (a) Write in figures the number **four thousand and ten**.

.....
(1)

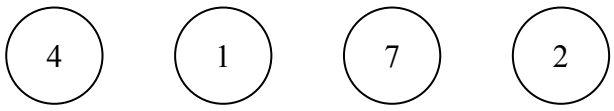
(b) Write the number 7842 correct to the nearest thousand.

.....
(1)

(c) Write down the value of the 3 in the number 5936

.....
(1)

(d) Here are four discs.
Each disc has a number on it.



Using **all** of these four discs,

(i) write down the smallest number you can make,

.....

(ii) write down the largest **even** number you can make.

.....
(2)

(e) Find the number which is exactly halfway between 457 and 639

.....
(2) **Q1**

(Total 7 marks)

Turn over

Leave blank

2. The pictogram gives information about the colours of the cars in a car park.

Black	
Blue	
Green	
Red	
Silver	
White	

 represents 10 cars.

(a) Find the number of blue cars.

.....
(1)

(b) Find the number of white cars.

.....
(1)

(c) Of which colour are there 12 cars?

.....
(1)

(d) Which colour is the mode?

.....
(1)

(e) Find the ratio of the number of black cars to the number of red cars.
Give your ratio in its simplest form.

.....
(2)

(Total 6 marks)

Q2

Leave blank

3. (a) Complete the following sentences by writing a sensible metric unit on each of the dotted lines.

(i) The weight of a laptop computer is 3.6 .....

(ii) The height of the tallest man in the world is 258 .....

(iii) A bottle contains 2 ..... of lemonade.

(3)

(b) Write down an estimate for the diameter of an apple.
Use a sensible metric unit.

....

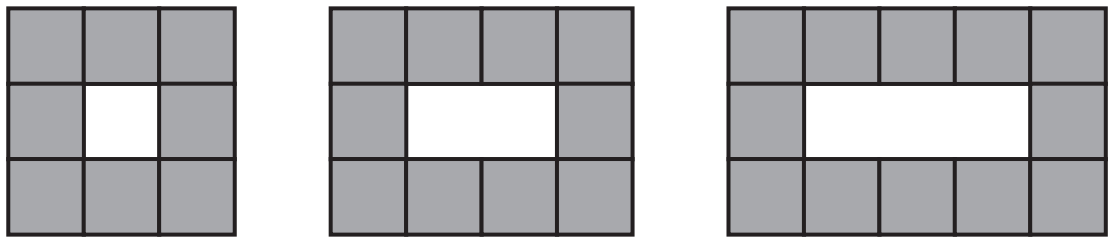
(2)

Q3

(Total 5 marks)

Leave blank

4. Here is a pattern of shapes made from grey square tiles.



Shape number 1 | Shape number 2 | Shape number 3

(a) In the space below, draw Shape number 4

(1)

This rule can be used to find the number of tiles needed for a shape in this pattern.

> Multiply the Shape number by 2 and then add 6 to your result.

(b) Work out the number of tiles needed for Shape number 12

.....

(2)

(c) Work out the Shape number of the shape with 48 tiles.

Shape number = ...

(2) **Q4**

(Total 5 marks)

Leave blank

5. (a) Write down the value of the 3 in the number 7.368

.....
(1)

(b) Round 7.368 to the nearest whole number.

.....
(1)

(c) Write 0.9 as a percentage.

..... %
(1)

(d) Write these numbers in order of size.
Start with the smallest number.

0.56 0.65 0.06 0.5 0.6

.....
(1)

(e) Write 0.03 as a fraction.

.....
(1) **Q5**

(Total 5 marks)

6. (a) Simplify $2k + 5k - k$

.....
(1)

(b) Simplify $p \times 7 \times q$

.....
(1)

(c) Simplify $y^2 + y^2 + y^2 + y^2$

.....
(1) **Q6**

(Total 3 marks)

Leave blank

7. Here are 10 car badges.

A B C D E

F G H I J

(a) Write down the letters of the two badges which have

(i) no lines of symmetry,

..... , ...

(ii) rotational symmetry of order 2

..... , ...

(4)

(b) Describe fully all the symmetries of badge G.

.....

.....

(2) **Q7**

(Total 6 marks)

Leave blank

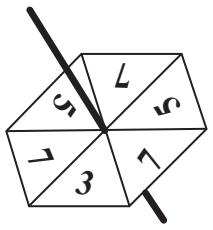
8. Here is a list of six numbers.

3 5 5 7 7 7

(a) Find the median.

.....
(2)

Here is a fair 6-sided spinner.



The sides of the spinner are labelled 3 5 5 7 7 7

Sasha spins the spinner once.

(b) Write down the probability that the spinner will land on

(i) an odd number

.....

(ii) 3

.....

(iii) 7

.....
(4) **Q8**

(Total 6 marks)

Leave blank

9. Find

(i) 59^2

.....

(ii) $\sqrt{1369}$

.....

(iii) the cube root of 4913

.....

(iv) 3^5

.....

Q9

(Total 4 marks)

10.

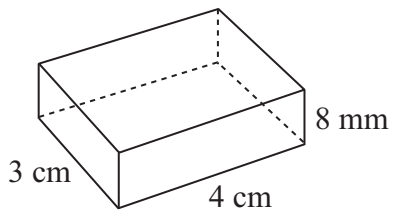


Diagram **NOT** accurately drawn

The diagram shows a cuboid.
The cuboid has length 4 cm, width 3 cm and height 8 **mm**.

Work out the volume, in **cm^3**, of the cuboid.

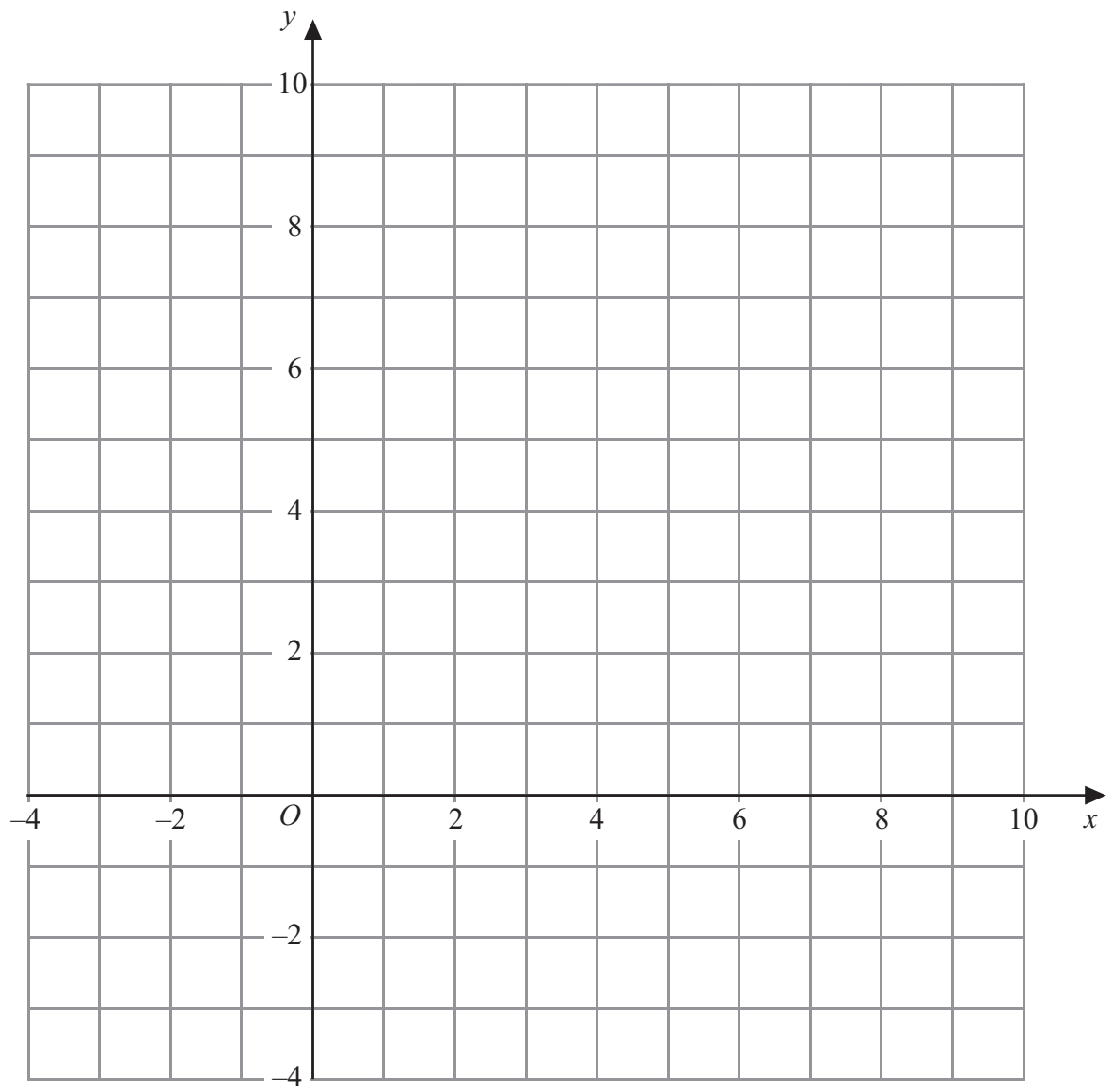
..... cm^3

Q10

(Total 3 marks)

Leave blank

11.



(a) On the grid, draw the graph of $y = x$
Label it **L**.

(1)

(b) On the grid, draw the graph of $y = 2x$
Label it **M**.

(2)

(Total 3 marks)

Q11

Leave blank

12.

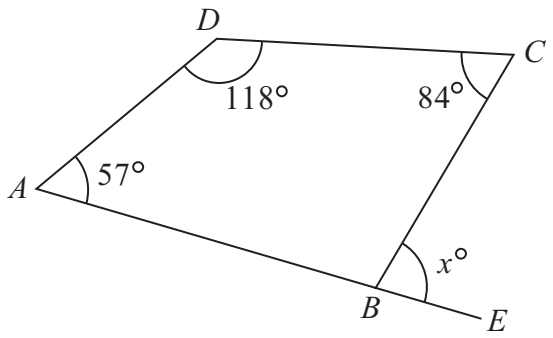


Diagram **NOT** accurately drawn

The diagram shows a quadrilateral *ABCD*.
Angle *BAD* = 57°.
Angle *ADC* = 118°.
Angle *BCD* = 84°.
ABE is a straight line.
Angle *CBE* = *x*°.

Work out the value of *x*.

x = ...

(Total 3 marks)

Q12

Leave blank

13. (a) Use your calculator to work out the value of

$$\frac{3.7\times2.9}{5.3}+1.4$$

Give your answer as a decimal.
Write down all the figures on your calculator display.

.....

(2)

(b) Give your answer to part (a) correct to 2 decimal places.

.....

(1)

(Total 3 marks)

Q13

14. Anya flew from Kuala Lumpur to Singapore.
The average speed for the journey was 248 km/h.
The journey time was 1 hour 15 minutes.

Work out the distance from Kuala Lumpur to Singapore.

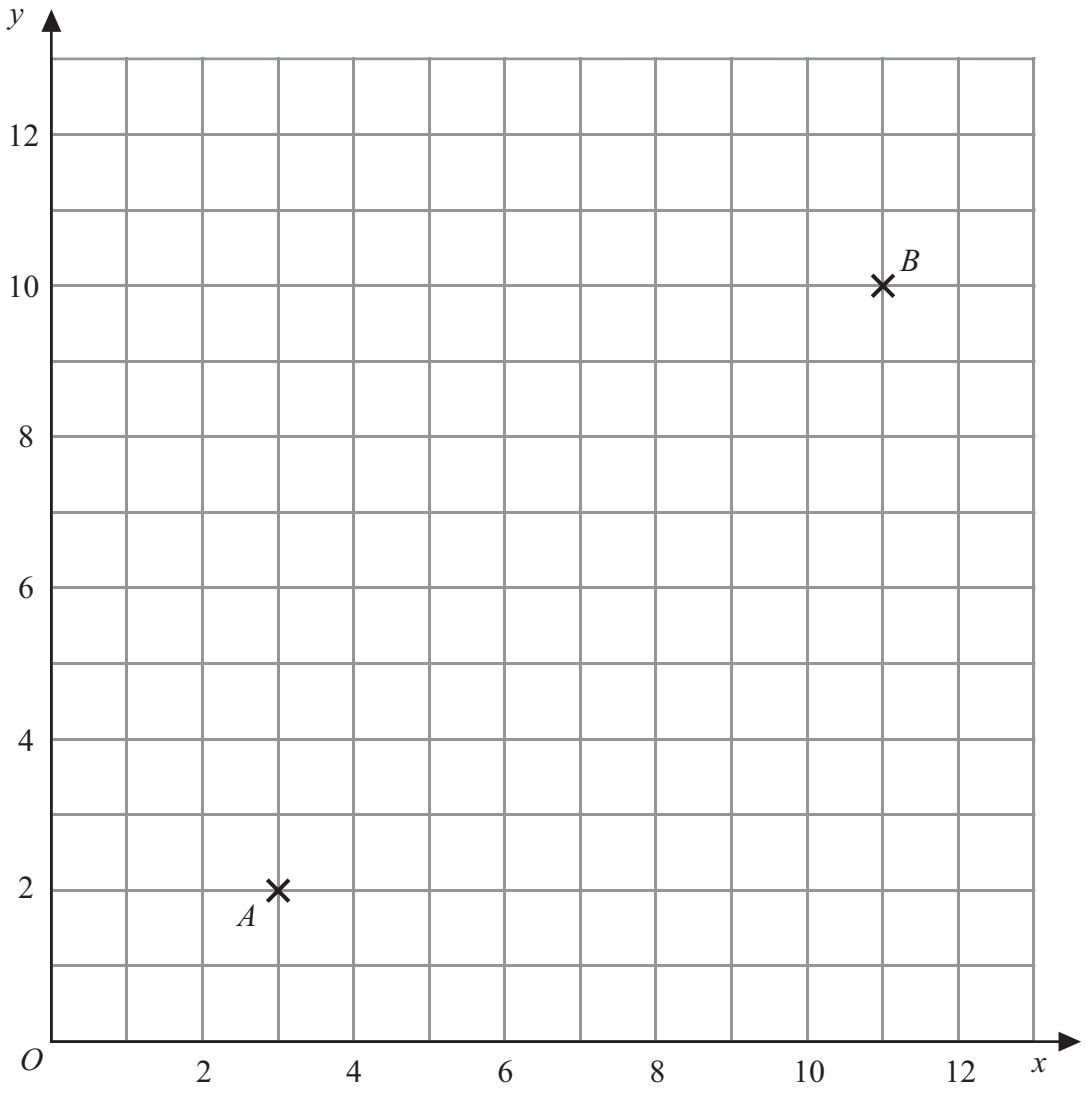
..... km

(Total 3 marks)

Q14

Leave blank

15.



The point A has coordinates (3, 2) and the point B has coordinates (11, 10).

(a) Find the coordinates of the midpoint of AB.

(..... , ...)

(2)

AB is a diameter of a circle.
CD is another diameter of this circle.
CD is perpendicular to AB.

(b) Find the coordinates of C and the coordinates of D.

C (..... , ...)

D (..... , ...)

(2)

Q15

(Total 4 marks)

Leave blank

16.

1 euro = £0.72
£1 = 221 Sri Lankan rupees

(a) Change £198 to euros.

..... euros
(2)

(b) Change 50 euros to Sri Lankan rupees.

..... Sri Lankan rupees
(2)

Q16

(Total 4 marks)

Leave blank

17. A bag contains some shapes.
Each shape is a circle or a triangle or a square.
Lewis takes at random a shape from the bag.
The probability that he will take a circle is 0.3
The probability that he will take a triangle is 0.1

(a) Work out the probability that he will take a square.

.....
(2)

(b) Work out the probability that he will take a shape with straight sides.

.....
(2)

Grace takes at random one of the shapes from the bag and then replaces the shape.
She does this 160 times.

(c) Work out an estimate for the number of times she will take a circle.

.....
(2) **Q17**

(Total 6 marks)

Leave blank

18. The price of a car is $9840
Kelly pays a deposit of 35% of this price.

(a) Work out 35% of $9840

$ .....
(2)

Tom buys a painting for $1350
He sells it for $1269

(b) Work out his percentage loss.

..... %
(3)

Q18

(Total 5 marks)

19. $V = \frac{2}{3}hy^2$

(a) $h = 2.6$ $y = 1.5$
Work out the value of V.

$V =$ .....
(2)

(b) $V = 35$ $y = 2.5$
Work out the value of h.

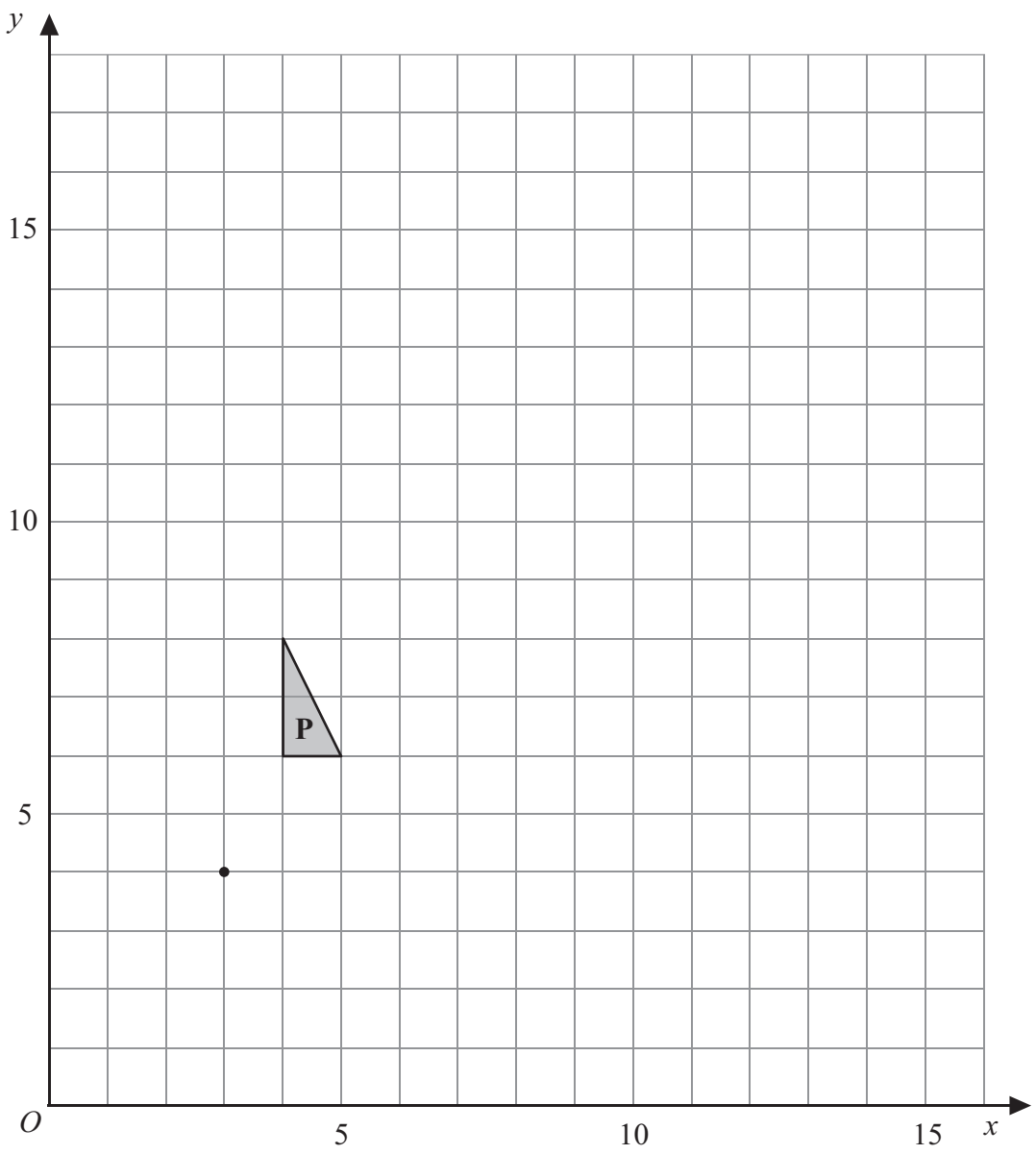
$h =$ .....
(2)

Q19

(Total 4 marks)

Leave blank

20.



(a) On the grid, enlarge triangle **P** with scale factor 3 and centre (3, 4).
Label the new triangle **Q**.

(3)

(b) On the grid, rotate triangle **P** through 90° clockwise about the point (3, 4).
Label the new triangle **R**.

(2) **Q20**

(Total 5 marks)

Leave blank

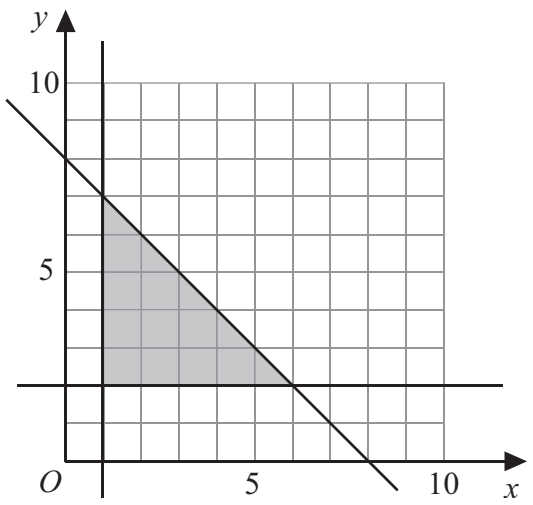
21. The scale of a map is 1 : 50 000
On the map, the distance between two schools is 19.6 cm.

Work out the real distance between the schools.
Give your answer in kilometres.

..... km **Q21**

(Total 3 marks)

22.



Write down the 3 inequalities that define the shaded region.

.....

.....

..... **Q22**

(Total 3 marks)

Leave blank

23.

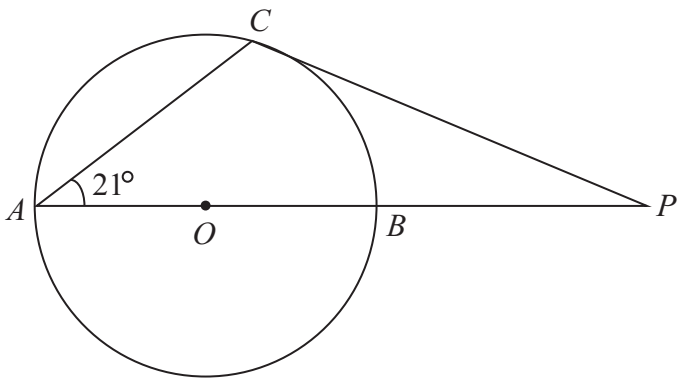


Diagram **NOT** accurately drawn

A, *B* and *C* are points on a circle, centre *O*.
AB is a diameter of the circle.
PC is a tangent to the circle.
ABP is a straight line.
Angle *BAC* = 21°.

Work out the size of angle *APC*.

..... °

Q23

(Total 4 marks)

TOTAL FOR PAPER: 100 MARKS

END