

Centre No.						Paper Reference					Surname	Initial(s)		
Candidate No.						4	4	0	0	/	1	F	Signature	

Paper Reference(s)

**4400/1F**

**London Examinations IGCSE**

**Mathematics**

Paper 1F

**Foundation Tier**

Monday 7 June 2010 – Afternoon

Time: 2 hours

Examiner's use only

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Team Leader's use only

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**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 21 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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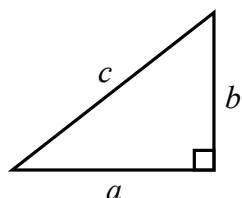
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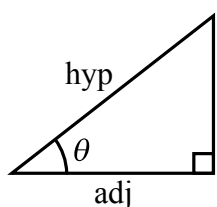
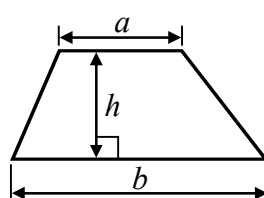
IGCSE MATHEMATICS 4400

FORMULA SHEET – FOUNDATION TIER

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



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



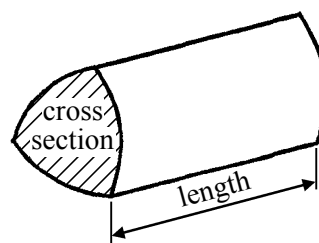
$adj = hyp \times \cos \theta$   
 $opp = hyp \times \sin \theta$   
 $opp = adj \times \tan \theta$

Volume of prism = area of cross section  $\times$  length

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

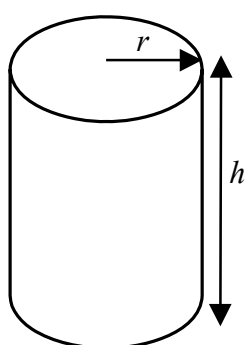
$\cos \theta = \frac{adj}{hyp}$

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



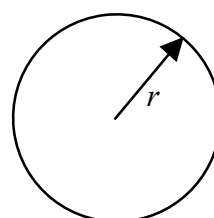
Circumference of circle =  $2\pi r$

Area of circle =  $\pi r^2$



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

Curved surface area of cylinder =  $2\pi r h$



**Answer ALL TWENTY ONE questions.**

**Write your answers in the spaces provided.**

**You must write down all stages in your working.**

1. The table shows the distance of each of six airports from London Heathrow airport.

Airport	Distance (km)
Colombo	8709
Delhi	6727
Dhaka	8009
Dubai	5492
Hong Kong	9624
Larnaca	3275

- (a) Which of the numbers in the table is the largest number?

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

- (b) Write the number 8009 in words.

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

- (c) Write down the value of the 4 in the number 5492

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

- (d) Write the number 6727 correct to the nearest hundred.

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

- (e) Which number is the smallest even number in the table?

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

- (f) Which number in the table is a multiple of 5?

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



(g) One of the numbers in the table, when written correct to the nearest thousand, is 9000  
Write down this number.

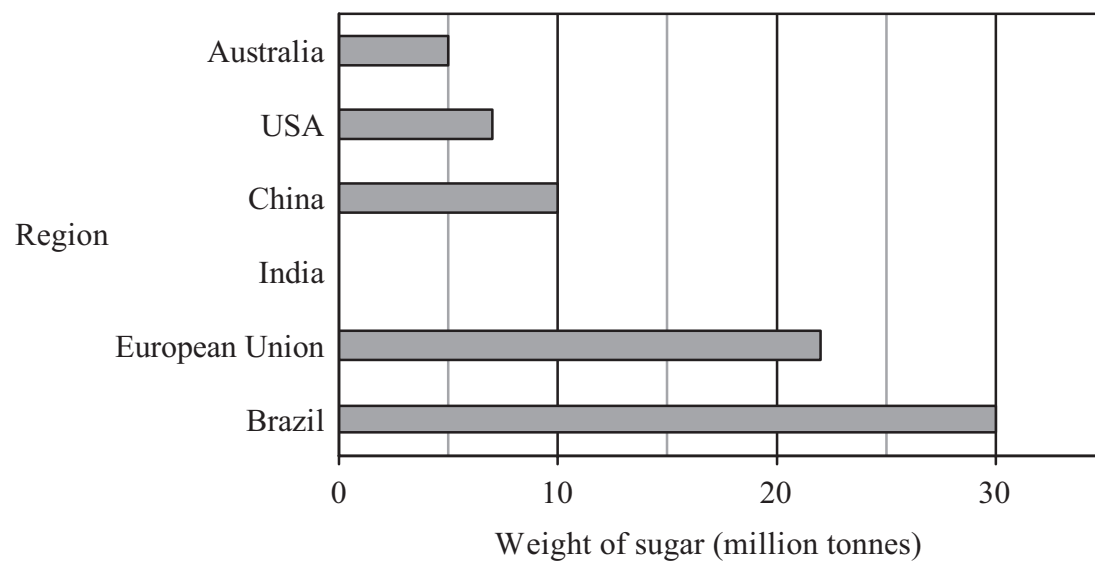
.....  
(1)

(Total 7 marks)

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Q1

2. The bar chart shows information about the weight of sugar produced by each of five regions in 2005.



(a) Write down the weight of sugar produced by the European Union.

..... million tonnes  
(1)

(b) Write down the name of the region which produced 7 million tonnes of sugar.

.....  
(1)

(c) Write down the name of the region which produced twice as much sugar as Australia.

.....  
(1)

(d) In 2005, India produced 21 million tonnes of sugar.  
Draw a bar on the bar chart to show this information.

(1)

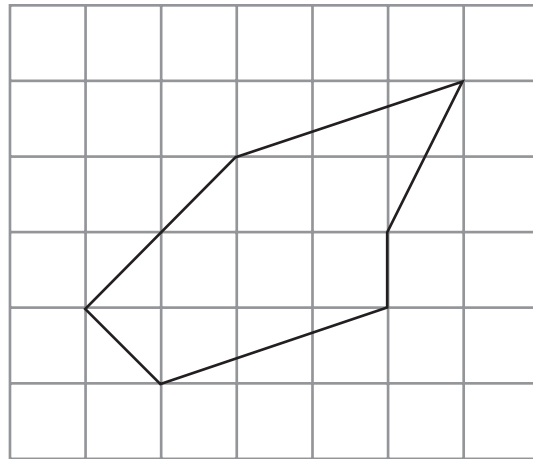


<p>(e) In 2005, the total weight of sugar produced in the world was 150 million tonnes.</p> <p>(i) What fraction of the 150 million tonnes was produced by Brazil? Give your fraction in its simplest form.</p> <p>.....</p> <p>(ii) Change your answer to part (i) to a decimal.</p> <p>.....</p> <p style="text-align: right;"><b>(3)</b></p> <p style="text-align: right;"><b>(Total 7 marks)</b></p>	<p>Leave blank</p> <p><b>Q2</b></p> <input type="text"/>
<p><b>3.</b> Here are the first five terms of a number sequence.</p> <p style="text-align: center;">25          22          19          16          13</p> <p>(a) Write down the next two terms of the sequence.</p> <p>..... , .....</p> <p style="text-align: right;"><b>(2)</b></p> <p>(b) Explain how you worked out your answer.</p> <p>.....</p> <p style="text-align: right;"><b>(1)</b></p> <p>(c) The 10th term of the sequence is <math>-2</math> Work out the 11th term of the sequence.</p> <p>.....</p> <p style="text-align: right;"><b>(1)</b></p> <p>(d) The 21st term of the sequence is <math>-35</math> Work out the 20th term of the sequence.</p> <p>.....</p> <p style="text-align: right;"><b>(1)</b></p> <p style="text-align: right;"><b>(Total 5 marks)</b></p>	<p><b>Q3</b></p> <input type="text"/>



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4. A polygon is shown on a grid of centimetre squares.



(a) On the polygon, mark with arrows ( $>$ ) a pair of parallel lines. (1)

(b) On the polygon, mark with crosses ( $\times$ ) a pair of perpendicular lines. (1)

(c) Find the area of the polygon.

.....  $\text{cm}^2$   
(2)

(Total 4 marks)

Q4

5. (a) Simplify  $n + n + n$

.....  
(1)

(b) Simplify  $3p + 4p - 2p$

.....  
(1)

(c) Simplify  $q \times 2 \times 4$

.....  
(1)

(Total 3 marks)

Q5



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6. 56% of the students at Mathstown School are girls.

(a) Work out the percentage of the students who are boys.

..... %  
**(1)**

There are 725 students at Mathstown School.

(b) Work out 56% of 725

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

$\frac{3}{5}$  of the students at Mathstown School can swim.

(c) Work out  $\frac{3}{5}$  of 725

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

**(Total 5 marks)**

**Q6**

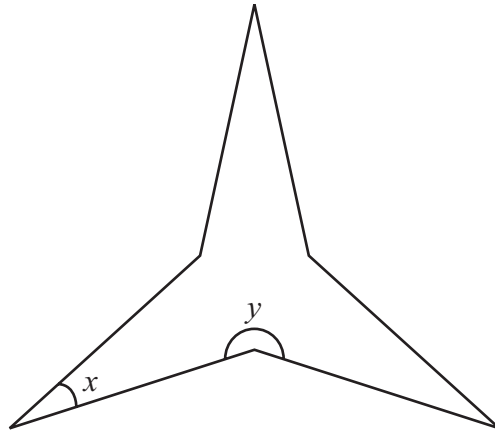
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7. Here is a 6-sided polygon.



(a) Write down the special name for a 6-sided polygon.

.....  
(1)

(b) (i) What type of angle is angle  $x$ ?

.....

(ii) What type of angle is angle  $y$ ?

.....  
(2)

(c) Write down the order of rotational symmetry of the polygon.

.....  
(1)

(d) Measure the length of one side of the polygon.

..... cm  
(1)

(e) Find the perimeter of the polygon.

..... cm  
(2)

Q7

(Total 7 marks)





Leave  
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8.



Ashok has six coins in his pocket.  
He has one 5 cent coin, two 10 cent coins and three 20 cent coins.  
He takes at random a coin from his pocket.

(a) Find the probability that he takes a 5 cent coin.

.....  
(1)

(b) Find the probability that he takes a coin worth less than 5 cents.

.....  
(1)

(c) Find the probability that he takes a coin worth more than 1 cent.

.....  
(1)

(d) Find the probability that he takes a 10 cent coin.

.....  
(2)

(e) Find the probability that he does **not** take a 10 cent coin.

.....  
(1)

(Total 6 marks)

Q8



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9. (a) Calculate the cube of 8

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

(b) Calculate the value of

(i)  $3^4$

.....

(ii)  $2^3 \times 5^2$

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

(c) (i) Calculate the value of  $\frac{6}{0.7^2}$

Write down all the figures on your calculator display.

.....

(ii) Give your answer to part (i) correct to 3 significant figures.

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

**Q9**

**(Total 5 marks)**



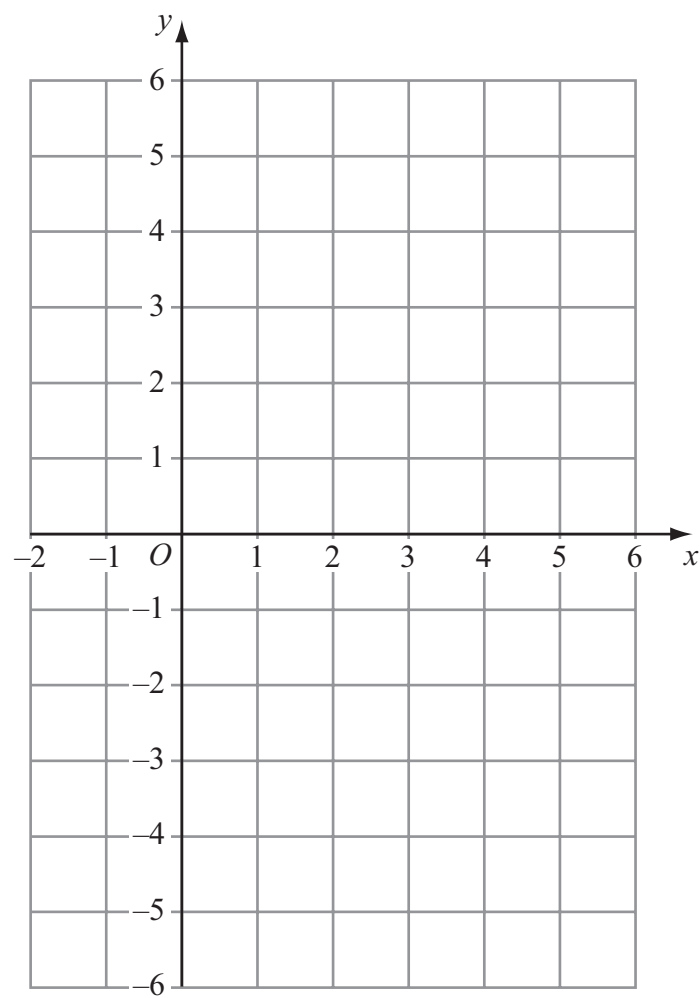
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10. (a) Complete the table of values for  $y = 2x - 3$

$x$	-1	0	1	2	3	4
$y$			-1			5

(2)

(b) On the grid, draw the graph of  $y = 2x - 3$



(2)

Q10

(Total 4 marks)



11.

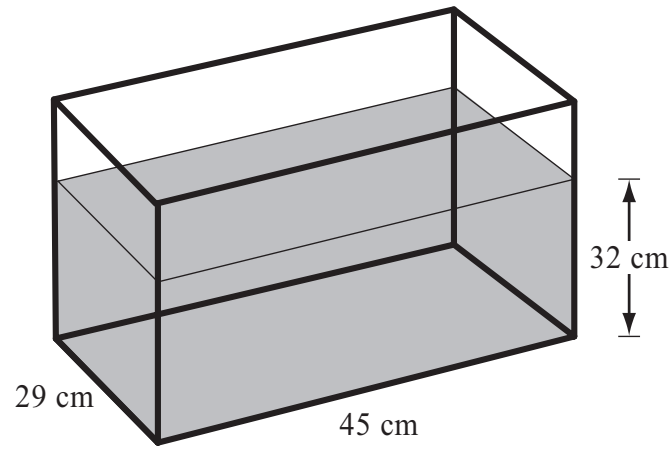


Diagram **NOT** accurately drawn

The diagram shows a fish tank in the shape of a cuboid.  
The water surface in the tank is a rectangle, which is 45 cm long and 29 cm wide.

- (a) Work out the area of a rectangle which is 45 cm long and 29 cm wide.

..... cm<sup>2</sup>  
(2)

Nathan wants to keep fish in the tank.  
There must be 150 cm<sup>2</sup> of water surface for each fish.

- (b) Work out the greatest number of fish Nathan should keep in the tank.

.....  
(2)

The depth of water in the tank is 32 cm.

- (c) Work out the volume of water in the tank.

..... cm<sup>3</sup>  
(2)



Leave  
blank



Diagram **NOT**  
accurately drawn

The diagram shows a fish bowl.  
The water surface is a circle with a diameter of 16 cm.

- (d) Work out the area of a circle with a diameter of 16 cm.  
Give your answer correct to 3 significant figures.

..... cm<sup>2</sup>  
(2)

Q11

(Total 8 marks)

12. Here are the ingredients needed to make Apple Fool for 6 people.

Apple Fool
Ingredients for 6 people
900 g cooking apples
100 g sugar
300 ml double cream

- (a) Work out the amount of sugar needed to make Apple Fool for 15 people.

..... g  
(2)

- (b) Work out the amount of cooking apples needed to make Apple Fool for 5 people.

..... g  
(2)

Q12

(Total 4 marks)



13.

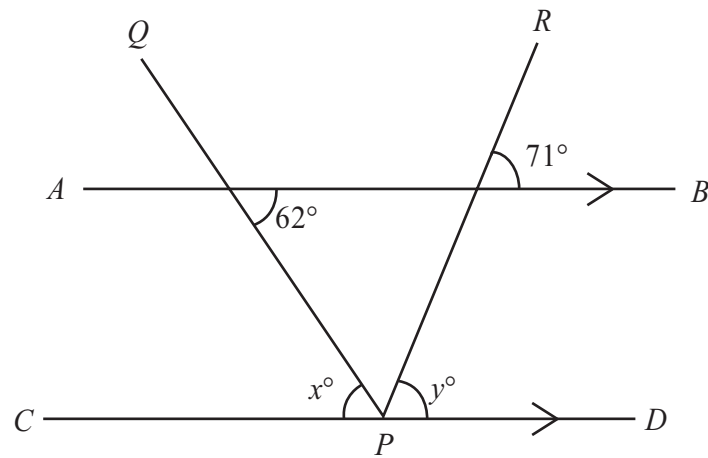


Diagram **NOT** accurately drawn

*AB* and *CPD* are parallel straight lines.  
*PQ* and *PR* are straight lines.

(a) (i) Find the value of  $x$ .

$x = \dots\dots\dots$

(ii) Give a reason for your answer.

..... (2)

(b) (i) Find the value of  $y$ .

$y = \dots\dots\dots$

(ii) Give a reason for your answer.

..... (2)

(Total 4 marks)

Q13



<p><b>14.</b> (a) Multiply out <math>5(n + 6)</math></p> <p style="text-align: right;">..... <b>(1)</b></p> <p>(b) Simplify <math>y \times y \times y \times y \times y \times y</math></p> <p style="text-align: right;">..... <b>(1)</b></p> <p>(c) Solve <math>4(x - 2) = 3</math></p> <p style="text-align: right;"><math>x =</math> ..... <b>(3)</b></p> <p style="text-align: right;"><b>(Total 5 marks)</b></p>	<p>Leave blank</p> <p><b>Q14</b></p> <input style="width: 20px; height: 20px;" type="text"/>
<p><b>15.</b> (a) <math>\frac{3}{10}</math> of the members of a tennis club are men.</p> <p><math>\frac{5}{6}</math> of these men are right-handed.</p> <p>Work out the fraction of the members of the tennis club who are right-handed men.</p> <p style="text-align: right;">..... <b>(2)</b></p> <p>(b) <math>\frac{7}{12}</math> of the members of a badminton club are women.</p> <p><math>\frac{3}{8}</math> of the members of the badminton club wear glasses.</p> <p>Work out the smallest possible number of members of the badminton club.</p> <p style="text-align: right;">..... <b>(2)</b></p> <p style="text-align: right;"><b>(Total 4 marks)</b></p>	<p><b>Q15</b></p> <input style="width: 20px; height: 20px;" type="text"/>



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16. The table shows information about the volume of water, in  $\text{m}^3$ , used by each of 80 families in one year.

Volume of water ( $V \text{ m}^3$ )	Frequency
$0 < V \leq 100$	2
$100 < V \leq 200$	4
$200 < V \leq 300$	6
$300 < V \leq 400$	18
$400 < V \leq 500$	44
$500 < V \leq 600$	6

(a) Write down the modal class.

.....  
(1)

(b) Work out an estimate for the mean volume of water used by the 80 families.

.....  $\text{m}^3$   
(4)

(Total 5 marks)

Q16





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17.

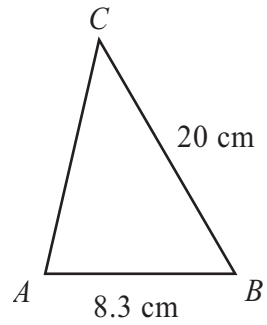


Diagram NOT accurately drawn

$AB = 8.3$  cm, correct to 2 significant figures.  
 $BC = 20$  cm, correct to 1 significant figure.

Write down the lower bound for the length of

(i)  $AB$ ,

..... cm

(ii)  $BC$ .

..... cm

(Total 2 marks)

Q17

18.

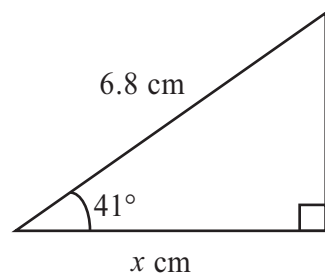


Diagram NOT accurately drawn

Work out the value of  $x$ .  
Give your answer correct to 3 significant figures.

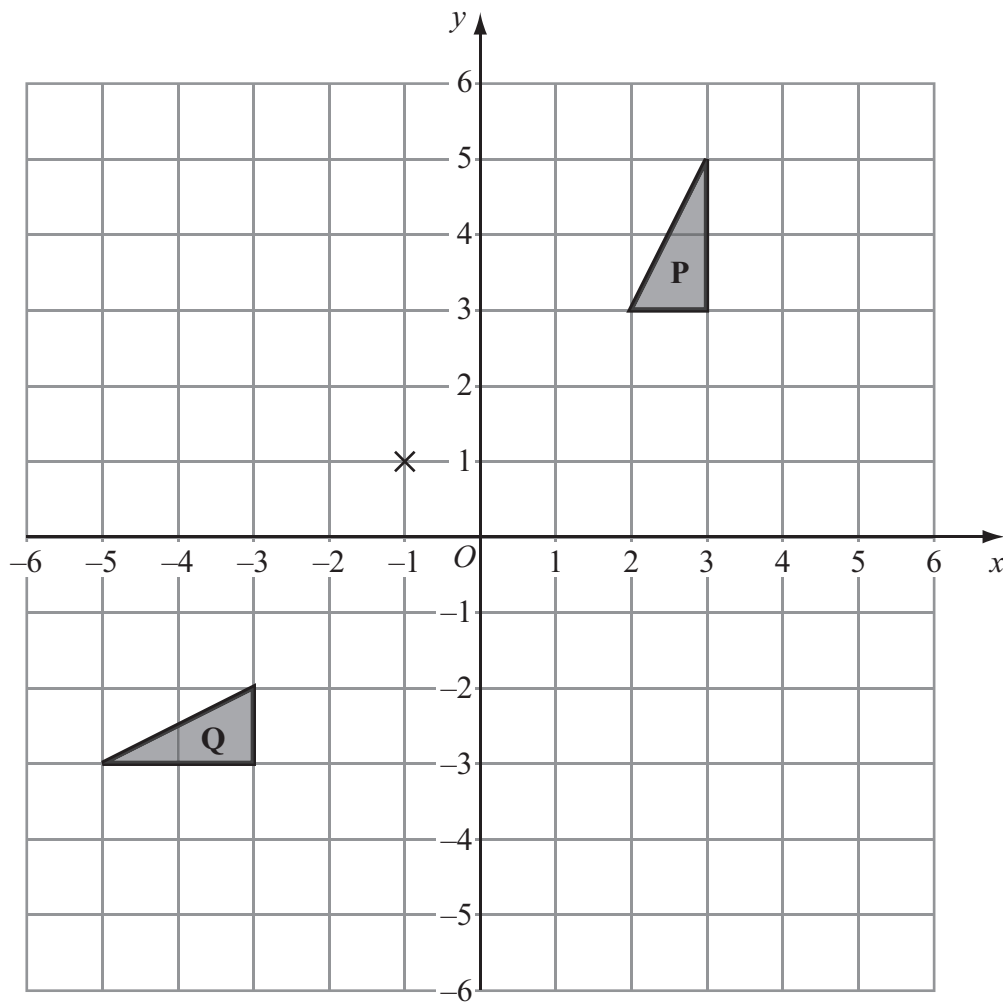
$x =$  .....

(Total 3 marks)

Q18



19.



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

..... (2)

(b) Rotate triangle **Q** through  $90^\circ$  anti-clockwise about the point  $(-1, 1)$ .  
Label the new triangle **R**.

(2) **Q19**

(Total 4 marks)



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20. Three numbers  $a$ ,  $b$  and  $c$  have a median of 4 and a range of 7

(a) Find the median of the three numbers  $a + 2$ ,  $b + 2$  and  $c + 2$

.....  
(1)

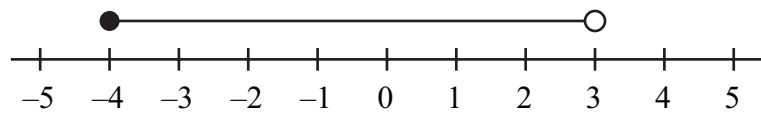
(b) Find the range of the three numbers  $a + 2$ ,  $b + 2$  and  $c + 2$

.....  
(1)

(Total 2 marks)

Q20

21. (a)



An inequality is shown on the number line.

Write down this inequality.

.....  
(2)

(b) (i) Solve the inequality  $2x + 9 > 1$

.....

(ii)  $n$  is a **negative** integer.

Write down all the values of  $n$  which satisfy  $2n + 9 > 1$

.....  
(4)

(Total 6 marks)

Q21

TOTAL FOR PAPER: 100 MARKS

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