| 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

| | | |
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Team Leader's use only

| | | |
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| | | |

# London Examinations IGCSE

## Mathematics

Paper 2F

# Foundation Tier

Friday 11 June 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 22 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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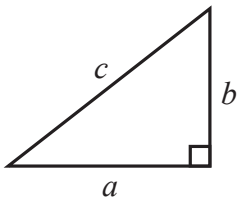
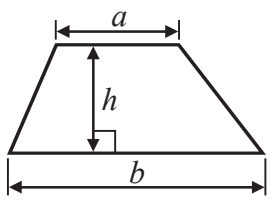
**IGCSE MATHEMATICS 4400**

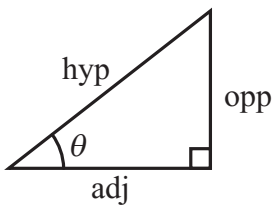
**FORMULA SHEET – FOUNDATION TIER**

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




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



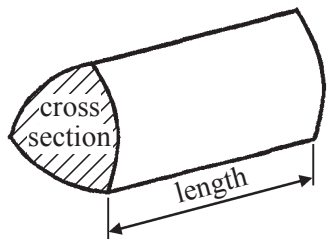

adj = hyp × cos $\theta$
opp = hyp × sin $\theta$
opp = adj × tan $\theta$

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

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

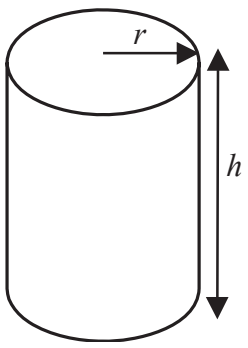
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



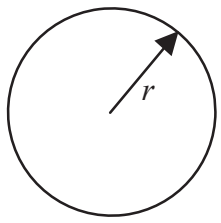

Circumference of circle = $2\pi r$

Area of circle = $\pi r^2$




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

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



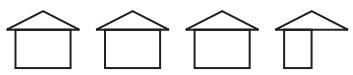
Leave blank

**Answer ALL TWENTY TWO questions.**

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

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

**1.** The pictogram shows information about the numbers of houses sold by some estate agents during one week.

| | |
|---|---|
| My Move |  |
| Homestead |  |
| Gates |  |
| Moveasy |  |
| Wall Brothers | |

 represents 4 houses sold.

(a) How many houses were sold by My Move?

.....

**(1)**

(b) How many houses were sold by Gates?

.....

**(1)**

(c) Which estate agent sold 15 houses?

.....

**(1)**

(d) Wall Brothers sold 10 houses.
Show this information on the pictogram.

**(1)**

**Q1**

**(Total 4 marks)**

Leave blank

**2.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | 8 | 12 | 15 | 19 | 21 | 36 |

(a) From the numbers in the box, write down the number which is

(i) between 9 and 14

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

(ii) a factor of 38

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

(iii) a square number,

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

(iv) a prime number.

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

(b) From the numbers in the box, write down two numbers which add up to 40.

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

(c) Use a number from the box to make this calculation correct.

$$204 \div .... = 17$$

**(1)**

**Q2**

**(Total 6 marks)**

Leave blank

**3.** James has £30 to spend on computer games.
Each game costs £6.70
He buys as many games as he can.

(a) How many games does James buy?

.....

**(2)**

James pays with a £20 note and a £10 note.

(b) How much change should he receive?

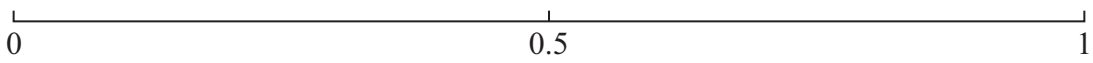
£.....

**(2)**

**Q3**

**(Total 4 marks)**

**4.**




On the probability scale, mark with a cross (**x**) the probability that

(i) next week will have 7 days.
Label this cross A.

(ii) when a fair coin is thrown it will show heads.
Label this cross B.

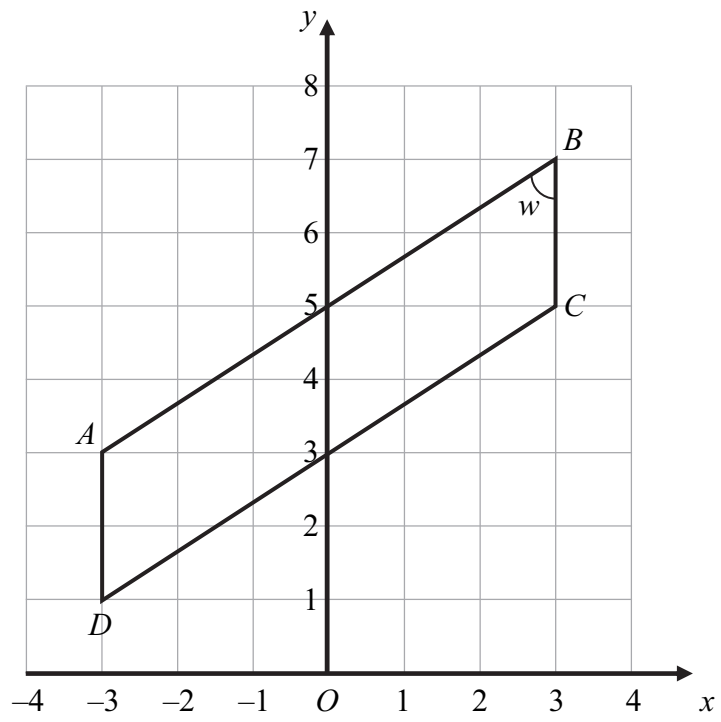
(iii) a person chosen at random will have a birthday in December.
Label this cross C.

**Q4**

**(Total 3 marks)**

Leave blank

**5.** The diagram shows a quadrilateral *ABCD* drawn on a centimetre grid.




(a) Write down the coordinates of *B*.

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

**(1)**

(b) Write down the coordinates of *D*.

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

**(1)**

(c) Write down the mathematical name for quadrilateral *ABCD*.

.....

**(1)**

(d) How many lines of symmetry has quadrilateral *ABCD*?

.....

**(1)**

(e) Measure and write down the size of angle *w*.

°

.....

**(1)**

**Q5**

**(Total 5 marks)**

Leave blank

**6.** There are five apples in a bag.
Here are their masses, in grams.

142 147 159 142 145

(a) Find the mode.

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

(b) Find the median.

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

(c) Work out the range.

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

(d) Work out the mean.

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

(e) Another apple, with mass more than 160 grams, is placed in the same bag.
Which one of these statements is true?

Statement **A** The mode will stay the same.

Statement **B** The median will stay the same.

Statement **C** The range will stay the same.

Statement **D** The mean will stay the same.

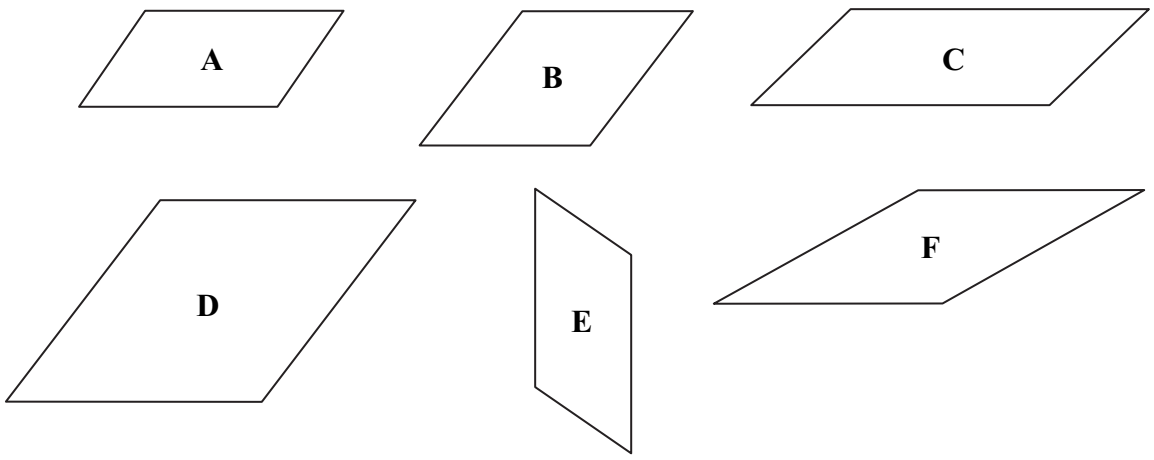
Statement .....
**(1)**

**Q6**

**(Total 8 marks)**

Leave blank

**7.** (a) Here are some shapes.



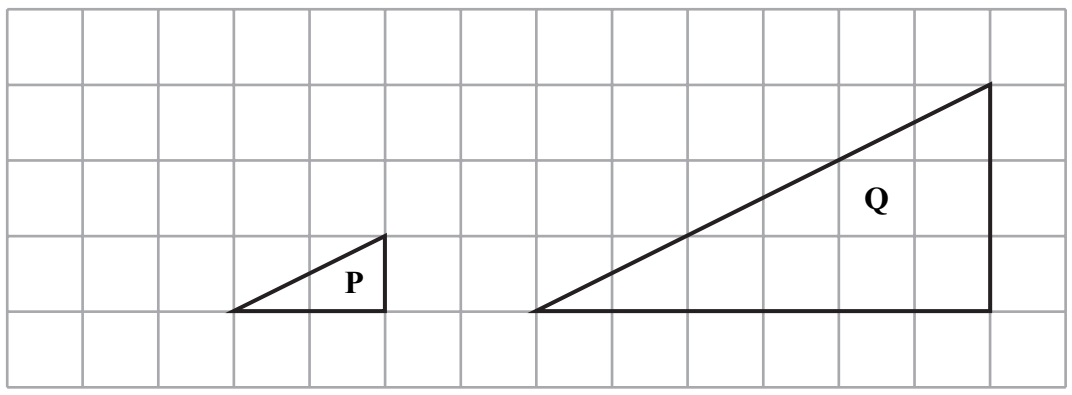

Write down the letter of the shape that is

(i) congruent to shape **A**, .....

(ii) an enlargement of shape **B**. .....

**(2)**

(b) Triangle **Q** is an enlargement of triangle **P**.




(i) Find the scale factor of the enlargement.

.....

(ii) On the diagram, mark with a cross (**x**), the centre of enlargement.

**(2)**

**(Total 4 marks)**

**Q7**

Leave blank

**8.** Write down a sensible metric unit for measuring

(i) the length of an aeroplane,

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

(ii) the weight of a pencil,

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

(iii) the area of a page in a book.

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

**Q8**

**(Total 3 marks)**

**9.** (a) Work out the value of $2.37^2$

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

(b) Write down the value of the 7 in 2.37

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

(c) (i) Find $\sqrt{7.89}$
Write down all the figures on your calculator display.

.....

(ii) Write your answer to part (c)(i) correct to 2 decimal places.

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

**Q9**

**(Total 4 marks)**

Leave blank

**10.** In the diagram, *AB*, *CD* and *DB* are straight lines.

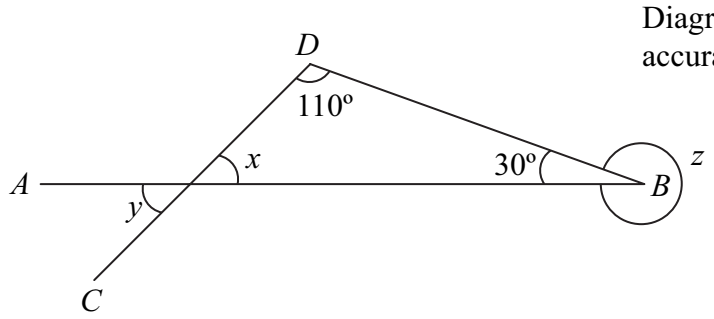



Diagram **NOT** accurately drawn

Work out the size of

(a) angle *x*,

.....°

**(2)**

(b) angle *y*,

.....°

**(1)**

(c) angle *z*.

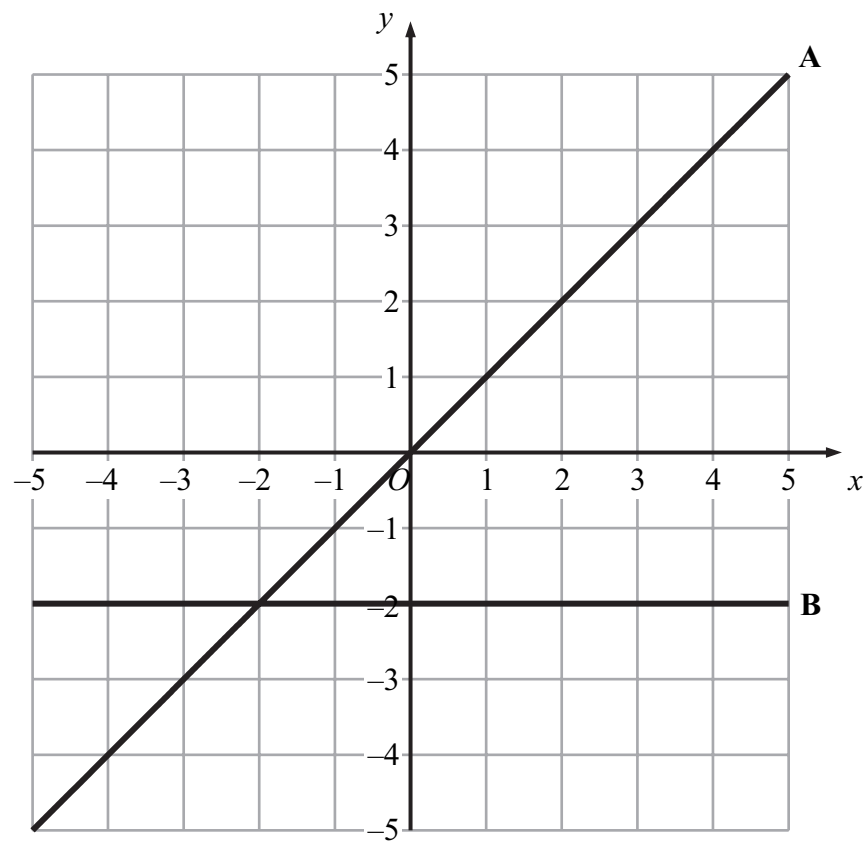
.....°

**(2)** **Q10**

**(Total 5 marks)**

Leave blank

**11.** The diagram shows two lines, **A** and **B**, drawn on a grid.




Write down the equation of

(i) line **A**, .....

(ii) line **B**. .....

**Q11**

**(Total 2 marks)**

Leave blank

**12.** Andrew buys 50 cookies.
He pays $2.50 for each cookie.

On Saturday, he gives away 8 cookies to his friends.

On Sunday, he sells 30 cookies at a charity stall.
He sells these cookies for $4.00 each.

On Monday, he sells the remaining cookies.
He sells these cookies for $3.00 each.

Calculate the total profit that Andrew makes.

$ .....

**Q12**

**(Total 5 marks)**

Leave blank

**13.** Solve

(a) $7w = 28$

$w =$ .....

**(1)**

(b) $4x + 5 = 17$

$x =$ .....

**(2)**

(c) $6y - 9 = 3y + 7$

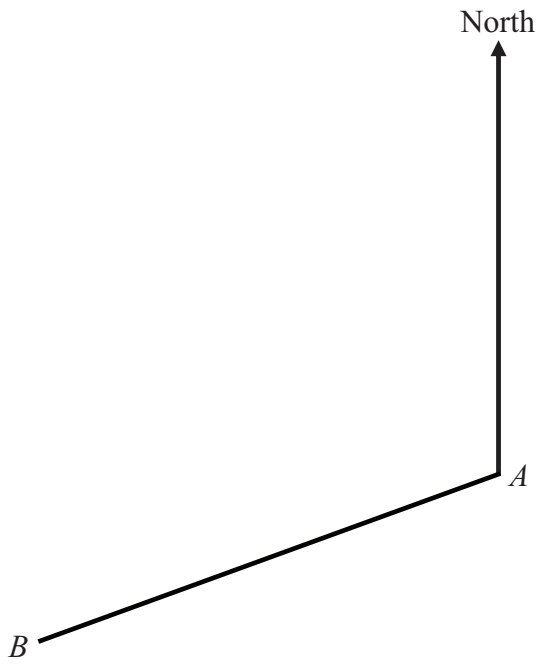
$y =$ .....

**(3)** **Q13**

**(Total 6 marks)**

Leave blank

**14.** The diagram shows two towns, *A* and *B*, on a map.




(a) By measurement, find the bearing of *B* from *A*.

.....°

**(2)**

(b) *C* is another town.
The bearing of *C* from *A* is 050º.
Find the bearing of *A* from *C*.

.....°

**(2)**

(c) The scale of the map is 1 cm to 5 km.
Find the real distance from town *A* to town *B*.

..... km

**(3)**

**Q14**

**(Total 7 marks)**

Leave blank

**15.** (a) Work out the value of $3w + 2x$ when $w = -4$ and $x = 7$

.....

**(2)**

(b) Work out the value of $5y^2$ when $y = 3$

.....

**(2)** **Q15**

**(Total 4 marks)**

**16.** A spinner can land on red or blue or yellow.
The spinner is biased.
The probability that it will land on red is 0.5
The probability that it will land on blue is 0.2

(a) Imad spins the spinner once.
Work out the probability that it will land on yellow.

.....

**(2)**

(b) Janet spins the spinner 30 times.
Work out an estimate for the number of times the spinner will land on blue.

.....

**(2)** **Q16**

**(Total 4 marks)**

Leave blank

**17.** (a) Rosetta drives 85 kilometres in 1 hour 15 minutes.
Work out her average speed in kilometres per hour.

..... km/h
**(2)**

(b) Rosetta drives a total distance of 136 kilometres.
Work out 85 as a percentage of 136

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

(c) Sometimes Rosetta travels by train to save money.
The cost of her journey by car is £12
The cost of her journey by train is 15% less than the cost of her journey by car.
Work out the cost of Rosetta's journey by train.

£.....
**(3)**

**Q17**

**(Total 7 marks)**

Leave blank

**18.**

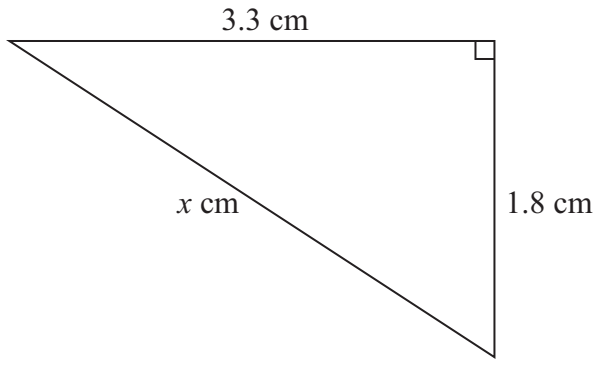



Diagram **NOT** accurately drawn

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

$x =$ .....

**Q18**

**(Total 3 marks)**





**Turn over**

Leave blank

**19.** (a) $A = \{2, 3, 4, 5\}$

$B = \{4, 5, 6, 7\}$

(i) List the members of $A \cap B$.

.....

(ii) How many members are in $A \cup B$?

.....

**(2)**

(b) $\mathcal{E} = \{3, 4, 5, 6, 7\}$
$P = \{3, 4, 5\}$
Two other sets, $Q$ and $R$, each contain exactly three members.
$P \cap Q = \{3, 4\}$
$P \cap R = \{3, 4\}$
Set $Q$ is not the same as set $R$.

(i) Write down the members of a possible set $Q$.

.....

(ii) Write down the members of a possible set $R$.

.....

**(2)**

**Q19**

**(Total 4 marks)**

Leave blank

**20.** Rectangular tiles have width $(x + 1)$ cm and height $(5x - 2)$ cm.

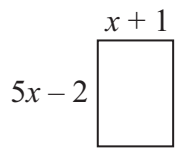



Diagram **NOT** accurately drawn

Some of these tiles are used to form a large rectangle.
The large rectangle is 7 tiles wide and 3 tiles high.

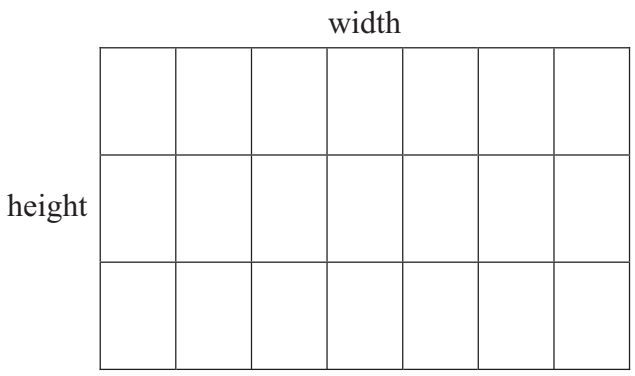



Diagram **NOT** accurately drawn

The perimeter of the large rectangle is 68 cm.

(a) Write down an equation in $x$.

.....

**(3)**

(b) Solve this equation to find the value of $x$.

$x =$ .....

**(3)**

**Q20**

**(Total 6 marks)**





**Turn over**

Leave blank

**21.** Show that $1\frac{1}{2} \div 1\frac{1}{4} = 1\frac{1}{5}$

**Q21**

**(Total 3 marks)**

**22.** The depth of water in a reservoir increases from 14 m to 15.75 m.
Work out the percentage increase.

..... %

**Q22**

**(Total 3 marks)**

**TOTAL FOR PAPER: 100 MARKS**

**END**