

Write your name here

Surname

maths made easy

Other names

**Pearson Edexcel  
International GCSE**

Centre Number

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Candidate Number

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# Mathematics A

**Level 1/2  
Paper 2F**



**Foundation Tier**

Sample assessment material for first teaching September 2016

**Time: 2 hours**

Paper Reference

**4MA1/2F**

**You must have:**

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

Total Marks

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## Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.  
Anything you write on the formulae page will gain **NO** credit.

## Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

## Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ►

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1/1/2/

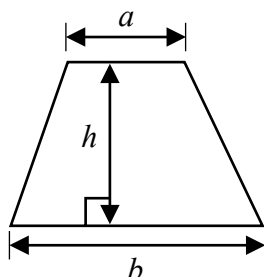


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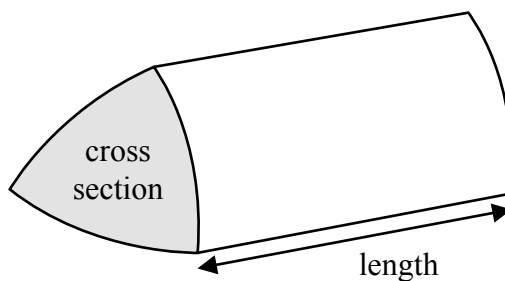
**PEARSON**

**International GCSE Mathematics**  
**Formulae sheet – Foundation Tier**

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

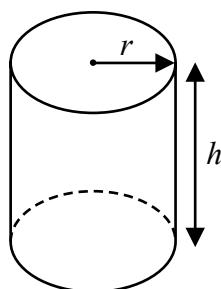


**Volume of prism** = area of cross section  $\times$  length



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

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



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Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 The table shows the distance from Delhi to each of six cities.

City	Distance (km)
Bengaluru	2061
Chennai	2095
Hyderabad	1499
Kolkata	1461
Mumbai	1407
Pune	1417

(a) Which number in the table is the smallest number?

1407

(1)

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

ends in 5 or 0

2095

(1)

(c) Write down the value of the 6 in the number 1461

THTU  
1461

60

(1)

(d) Write the number 1499 correct to the nearest thousand.

1000

(1)

(Total for Question 1 is 4 marks)

2 On the probability scale, mark with a cross (×) the probability that

(a) a fair 6-sided dice will land on a number less than 7

Label this cross **A**.

**Certain**

(1)

(b) a fair 6-sided dice will show an even number when thrown.

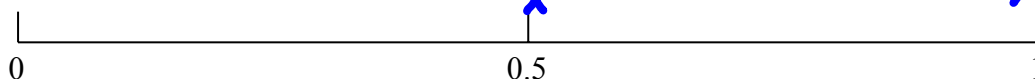
Label this cross **B**.

**2, 4, 6**

**B**

**A**

(1)



(Total for Question 2 is 2 marks)

3 The table shows midday temperatures in five cities one day in winter.

City	Midday temperature (°C)
Paris	2
Cardiff	-5
London	-3
Edinburgh	-1
Berlin	-8

(a) Which city had the lowest midday temperature?

**Berlin**

(1)

The midday temperature in Exeter is 6°C higher than the midday temperature in Cardiff.

(b) Work out the midday temperature in Exeter.

$$-5 + 6 = 1$$

**1**

(1)

°C

By midnight, the temperature in London had fallen by 4°C.

(c) Work out the midnight temperature in London.

$$-3 - 4 = -7$$

**-7**

(1)

°C

The midday temperature in Glasgow is halfway between the midday temperature in Paris and the midday temperature in Berlin.

(d) Work out the midday temperature in Glasgow.

$$\frac{2 - 8}{2} = \frac{-6}{2} = -3$$

**-3**

(2)

°C

(Total for Question 3 is 5 marks)

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4 There are 30 counters in a bag.  
 1 of the counters is yellow.  
 The rest of the counters are either blue or green.

Sharita takes a counter from the bag at random.

(a) Write down the probability that she will take

(i) a yellow counter

$$\frac{\text{no of yellow}}{\text{total}}$$

$$\frac{1}{30} \quad (1)$$

(ii) a red counter

no reds

$$0 \quad (1)$$

The probability that Sharita will take a blue counter from the bag is  $\frac{3}{10}$

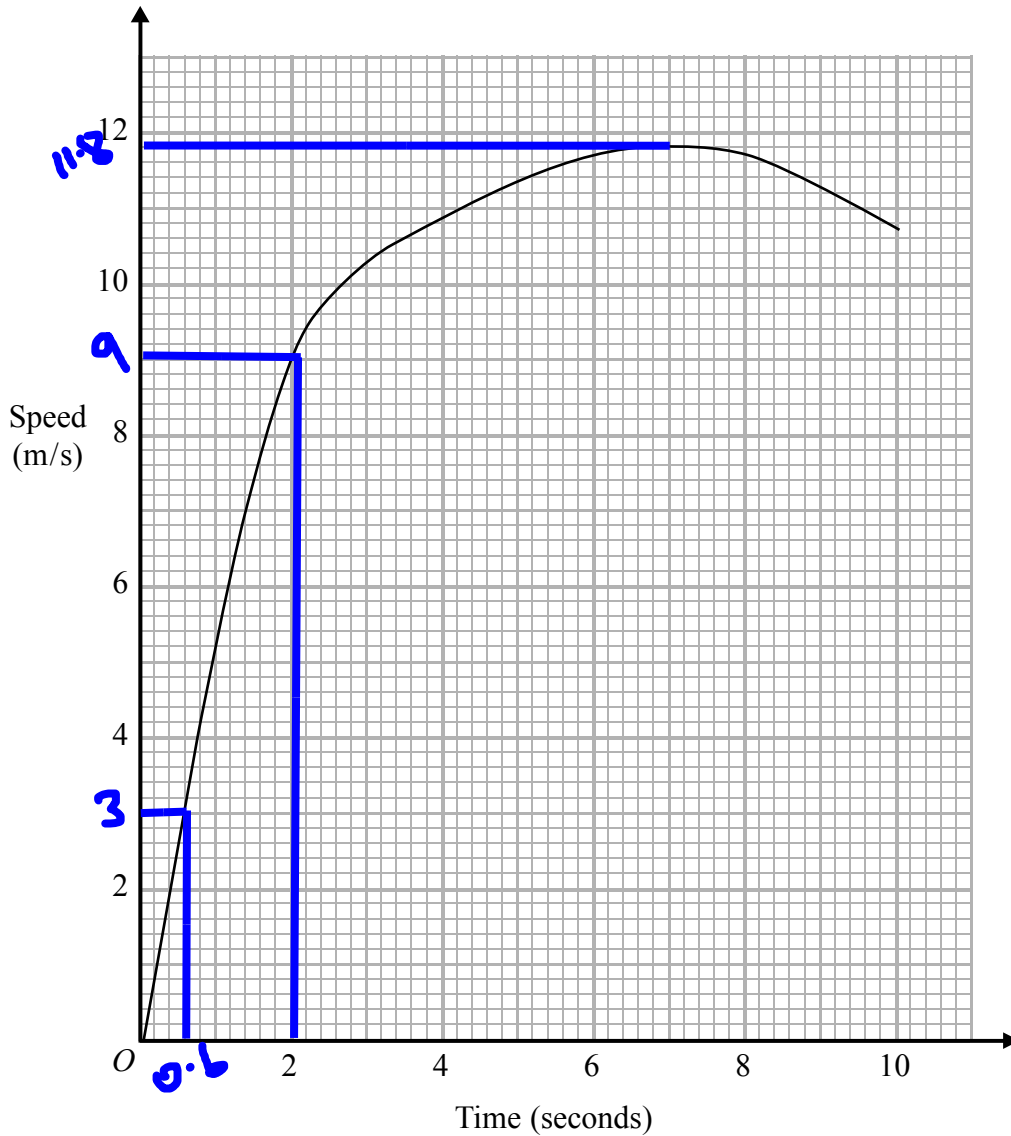
(b) Find the probability that she will **not** take a blue counter.

$$1 - \frac{3}{10} = \frac{7}{10}$$

$$\frac{7}{10} \quad (1)$$

(Total for Question 4 is 3 marks)

- 5 Jason runs in a race. The graph shows his speed, in metres per second (m/s), during the first 10 seconds of the race.



- (a) Write down Jason's speed at 2 seconds.

..... **9** m/s  
(1)

- (b) Write down Jason's greatest speed.

..... **11.8** m/s  
(1)

- (c) Write down the time at which Jason's speed was 3 m/s.

..... **0.6** seconds  
(1)

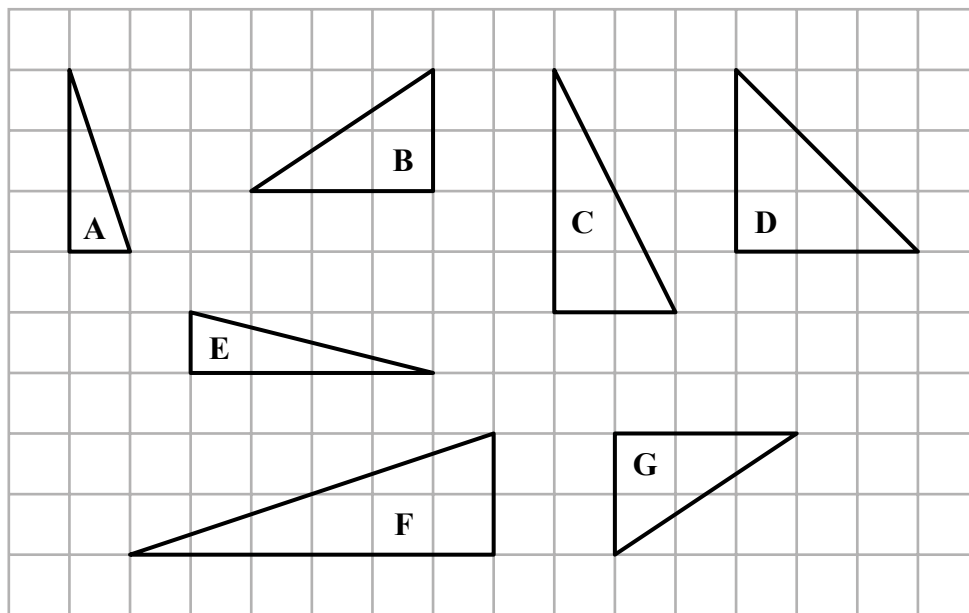
**(Total for Question 5 is 3 marks)**

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6 Here are seven triangles drawn on a square grid.



(a) Write down the letters of the two triangles that are congruent.

*Exactly the same*

**B**                      **G**

....., .....

(1)

(b) One of the triangles is similar to triangle A.  
Write down the letter of this triangle.

*Can be enlarged*

**F**

.....

(1)

(c) One of the triangles is isosceles.  
Write down the letter of this triangle.

**D**

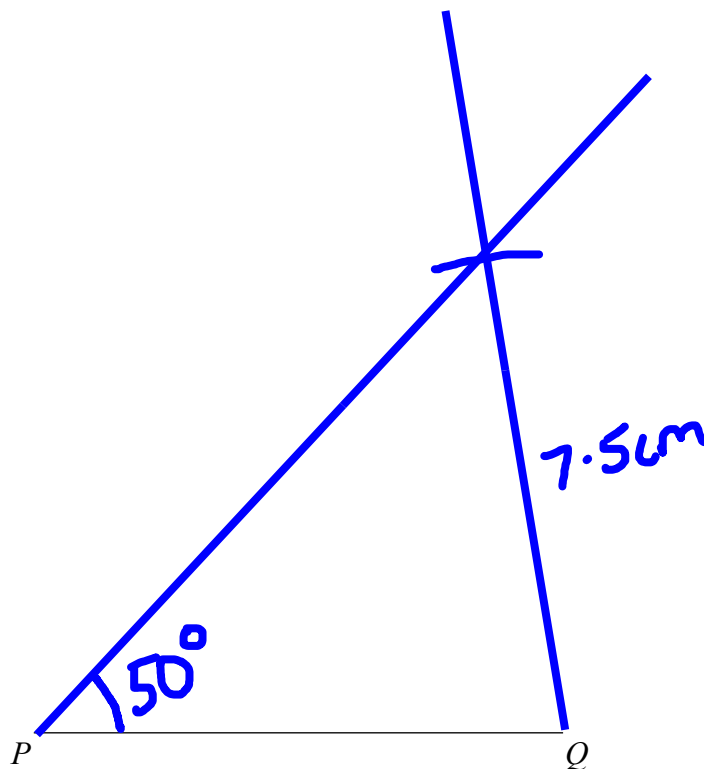
.....

(1)

(Total for Question 6 is 3 marks)

- 7  $PQR$  is a triangle.  
 $PQ = 7$  cm and  $QR = 7.5$  cm.  
Angle  $QPR = 50^\circ$

Draw accurately the triangle  $PQR$  with  $PQ$  as its base.



(Total for Question 7 is 2 marks)

- 8 (a) Find the value of  $\sqrt{46.24}$

6.8

(1)

- (b) Find the value of  $9^3$

729

(1)

- (c) Find the cube root of 19.683

2.7

(1)

(Total for Question 8 is 3 marks)



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9 (a) Simplify  $3m + 2m - m$

$$4m$$

(1)

(b) Simplify  $6k \times 3p$

$$18kp$$

(1)

(c) Solve  $7e = 28$

$$4$$

$e =$

(1)

$$P = 4r - 3q$$

(d) Work out the value of  $P$  when  $r = -7$  and  $q = 5$

$$\begin{aligned} P &= 4(-7) - 3(5) \\ &= -28 - 15 = -43 \end{aligned}$$

$P =$

$$-43$$

(2)

$$P = 4r - 3q$$

(e) Work out the value of  $r$  when  $P = 9$  and  $q = 8$

$$9 = 4r - 3(8)$$

$$9 = 4r - 24$$

$$4r = 33$$

$$r = \frac{33}{4} \text{ or } 8.25$$

$r =$

$$8.25$$

(3)

(f) Factorise  $5c + 30$

$$5(c + 6)$$

(1)

(Total for Question 9 is 9 marks)

- 10 Umar buys 7 first-class tickets and 9 second-class tickets for the train journey from Colombo to Kandy.  
The total cost is 4500 Sri Lankan rupees.  
The cost of each first-class ticket is 360 Sri Lankan rupees.

(a) Work out the cost of each second-class ticket.

$$360 \times 7 = 2520 \quad (\text{total 1st class})$$
$$4500 - 2520 = 1980 \quad (\text{total 2nd})$$
$$\frac{1980}{9 \text{ tickets}} = 220 \text{ per ticket}$$

220

..... Sri Lankan rupees  
(3)

The train left Colombo at 16:55  
The train arrived in Kandy at 20:15

(b) How long did the train take to get from Colombo to Kandy?

.....  
(2)

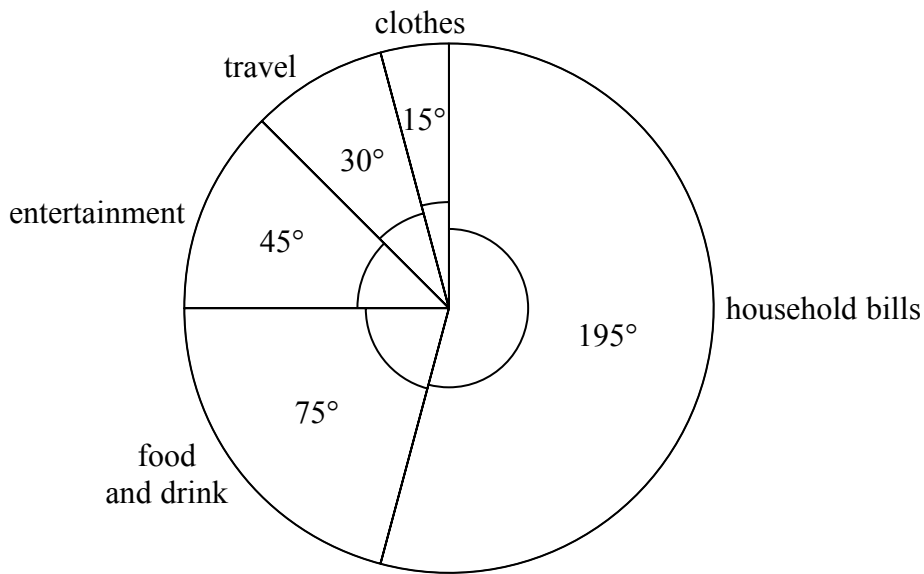
(Total for Question 10 is 5 marks)

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11 The pie chart shows information about Andrew's spending last month.



Andrew spent \$80 on travel last month.

(a) Work out the amount Andrew spent on household bills last month.

\$.....  
(3)

A second pie chart is to be drawn for Cathy's spending.  
Cathy spent a total of \$800 last month.  
She spent \$120 on entertainment last month.

(b) Calculate the size of the angle for entertainment in the second pie chart.

.....  
(2)

(Total for Question 11 is 5 marks)

12 The diagram shows the floor plan of a room in Kate's house.

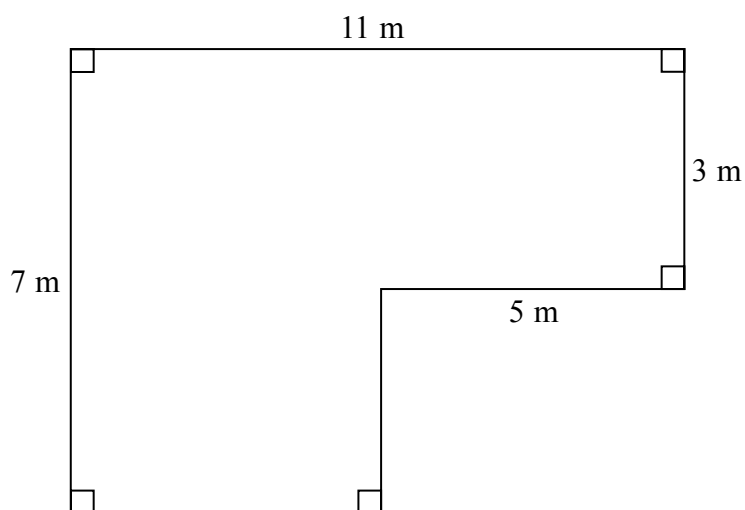


Diagram **NOT** accurately drawn

Kate is going to cover the floor with tiles.  
She is going to buy some packs of tiles.

The tiles in each pack of tiles cover  $2\text{ m}^2$  of floor.  
Each pack of tiles costs £24.80

Work out how much it will cost Kate to buy the packs of tiles she needs.

£.....

**(Total for Question 12 is 5 marks)**

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- 13** A ship has a length of 345 metres.  
A scale model is made of the ship.  
The scale of the model is 1:200

Work out the length of the scale model of the ship.  
Give your answer in centimetres.

.....cm

**(Total for Question 13 is 3 marks)**

- 14** *A* has coordinates (3, 6)  
*B* has coordinates (−5, 8)

Work out the coordinates of the midpoint of *AB*.

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

**(Total for Question 14 is 2 marks)**

15 Here is a list of the ingredients needed to make leek and potato soup for 6 people.

<b>Leek and Potato Soup</b>	
Ingredients for 6 people	
900 ml	chicken stock
900 ml	water
750 g	leeks
350 g	potatoes
350 g	onions

Paul wants to make leek and potato soup for 15 people.

(a) Work out the amount of chicken stock he needs.

..... ml  
(2)

Mary makes leek and potato soup for a group of people.  
She uses 3 kg of leeks.

(b) Work out the number of people in the group.

.....  
(2)

**(Total for Question 15 is 4 marks)**

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16 Find the lowest common multiple (LCM) of 20, 30 and 45

.....  
**(Total for Question 16 is 3 marks)**

17 The first four terms of an arithmetic sequence are

2      9      16      23

Write down an expression, in terms of  $n$ , for the  $n$ th term.

.....  
**(Total for Question 17 is 2 marks)**

18

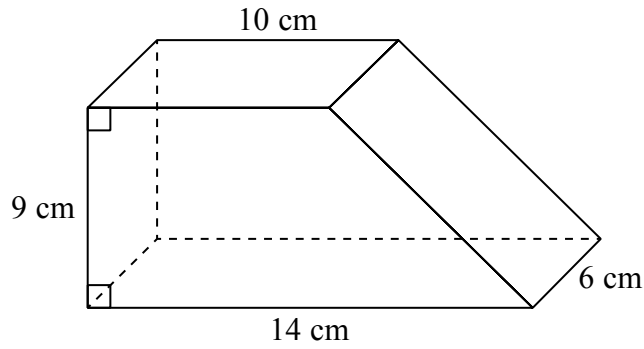


Diagram **NOT**  
accurately drawn

The diagram shows a solid prism.  
The cross section of the prism is a trapezium.

The prism is made from wood with density  $0.7 \text{ g/cm}^3$

Work out the mass of the prism.

20

(Total for Question 18 is 4 marks)



19 (a) Simplify  $p^5 \times p^4$

.....  
(1)

(b) Simplify  $(m^4)^{-3}$

.....  
(1)

(c) Write down the value of  $c^0$

.....  
(1)

(d) Solve  $5(x + 7) = 2x - 10$   
Show clear algebraic working.

$x =$  .....  
(3)

**(Total for Question 19 is 6 marks)**

**20** On 1 May 2012, the cost of 5 grams of gold was 14 000 rupees.  
The cost of gold decreased by 7.5% from 1 May 2012 to 1 May 2013  
Work out the cost of 20 grams of gold on 1 May 2013

.....rupees

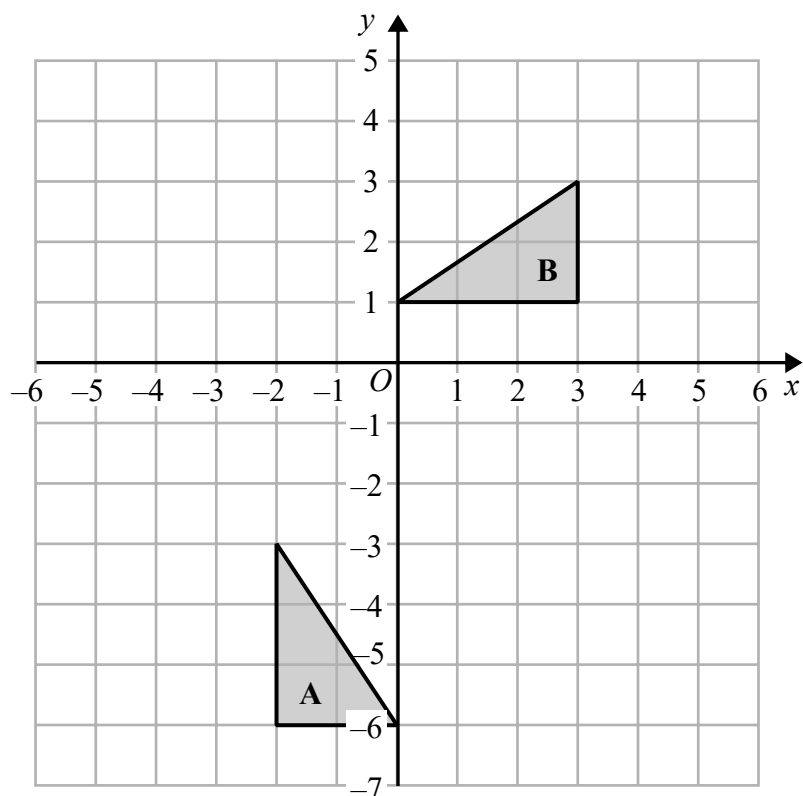
**(Total for Question 20 is 4 marks)**

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- (a) On the grid, translate triangle **A** by the vector  $\begin{pmatrix} 5 \\ 2 \end{pmatrix}$  (1)
- (b) Describe fully the single transformation that maps triangle **A** onto triangle **B**. (3)

(Total for Question 21 is 4 marks)

22  $a, b, c$  and  $d$  are 4 integers written in order of size, starting with the smallest integer.

The mean of  $a, b, c$  and  $d$  is 15

The sum of  $a, b$  and  $c$  is 39

(a) Find the value of  $d$ .

$$d = \dots\dots\dots (2)$$

Given also that the range of  $a, b, c$  and  $d$  is 10

(b) work out the median of  $a, b, c$  and  $d$ .

$$\dots\dots\dots (2)$$

**(Total for Question 22 is 4 marks)**

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- 23 Kwo invests HK\$40 000 for 3 years at 2% per year compound interest.  
Work out the value of the investment at the end of 3 years.

HK\$.....

**(Total for Question 23 is 3 marks)**

24 Solve the simultaneous equations

$$\begin{aligned}3x + y &= 13 \\ x - 2y &= 9\end{aligned}$$

Show clear algebraic working.

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots$$

**(Total for Question 24 is 3 marks)**

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25 (a) Show that  $\frac{5}{9} + \frac{1}{6} = \frac{13}{18}$

(2)

(b) Show that  $4\frac{2}{3} \div 3\frac{5}{9} = 1\frac{5}{16}$

(3)

**(Total for Question 25 is 5 marks)**

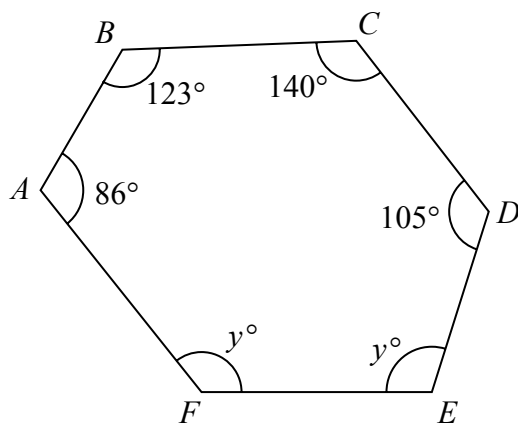


Diagram **NOT**  
accurately drawn

$ABCDEF$  is a hexagon.

Work out the value of  $y$ .

$y = \dots\dots\dots$

(Total for Question 26 is 4 marks)

**TOTAL FOR PAPER IS 100 MARKS**

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