Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number	Candidate Number

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Wednesday 7 June 2023

Morning (Time: 1 hour 30 minutes)

Paper reference **1MA1/2F**

Mathematics

PAPER 2 (Calculator)

Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator, Formulae Sheet (enclosed). Tracing paper may be used.

Total Marks

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.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 80
- 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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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Pearson

Foundation Tier Formulae Sheet

Perimeter, area and volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

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

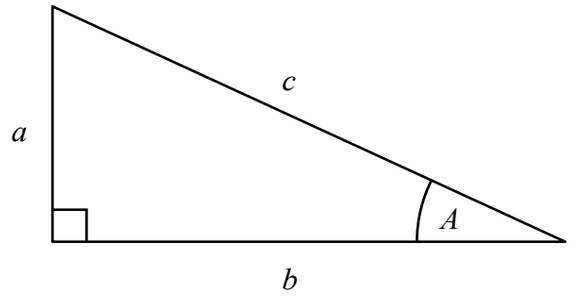
Volume of a prism = area of cross section × length

Where r is the radius and d is the diameter:

Circumference of a circle = $2\pi r = \pi d$

Area of a circle = πr^2

Pythagoras' Theorem and Trigonometry



In any right-angled triangle where a, b and c are the length of the sides and c is the hypotenuse:

$a^2 + b^2 = c^2$

In any right-angled triangle ABC where a, b and c are the length of the sides and c is the hypotenuse:

$\sin A = \frac{a}{c}$ $\cos A = \frac{b}{c}$ $\tan A = \frac{a}{b}$

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is number of times that the interest is compounded:

Total accrued = $P\left(1 + \frac{r}{100}\right)^n$

Probability

Where P (A) is the probability of outcome A and P (B) is the probability of outcome B:

P (A or B) = P (A) + P (B) – P (A and B)

END OF EXAM AID

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 6184 correct to the nearest hundred.

.....

(Total for Question 1 is 1 mark)

2 Write 0.7 as a fraction.

.....

(Total for Question 2 is 1 mark)

3 Change 9 metres into centimetres.

..... centimetres

(Total for Question 3 is 1 mark)

4 Simplify $3 \times 4t$

.....

(Total for Question 4 is 1 mark)

5 Here is a list of numbers.

20 40 60 80 100

One of these numbers is a multiple of 25

Which number?

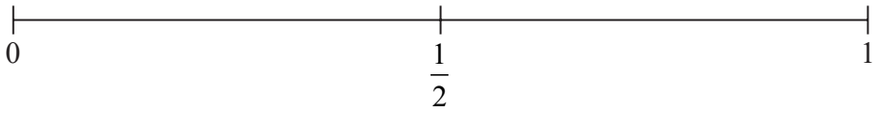
.....

(Total for Question 5 is 1 mark)

6 Shari has a fair ordinary dice.

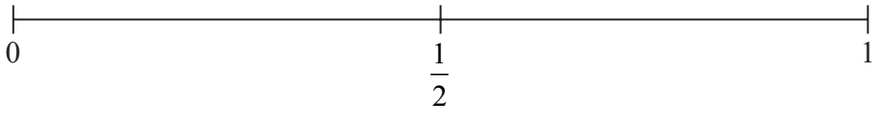
She rolls the dice once.

(a) On the probability scale, mark with a cross (×) the probability that Shari gets the number 7



(1)

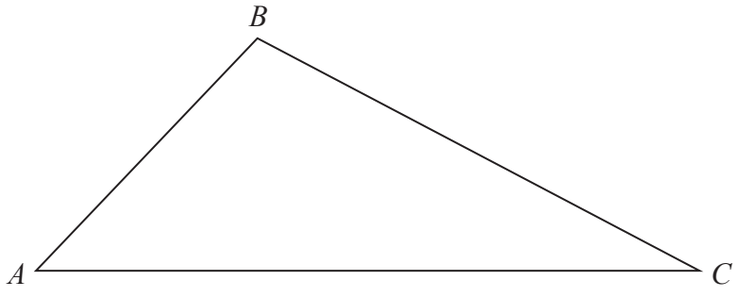
(b) On the probability scale, mark with a cross (×) the probability that Shari gets an even number.



(1)

(Total for Question 6 is 2 marks)

7 Here is a triangle.
The triangle is accurately drawn.



(a) Measure the length of AC.

..... cm

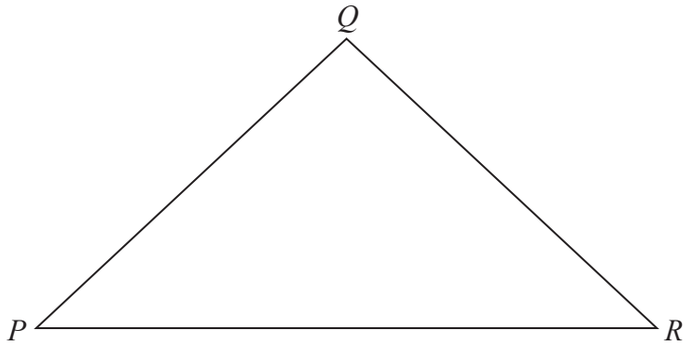
(1)

(b) Measure the size of angle B.

..... °

(1)

Here is a different triangle.



$QP = QR$

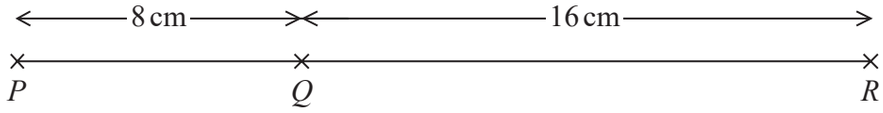
(c) Write down the mathematical name of this triangle.

.....

(1)

(Total for Question 7 is 3 marks)

8 The diagram shows three motorway service stations P, Q and R on a map.



The map has a scale of 1 cm = 4 km.

Work out the real distance from P to R.

..... km

(Total for Question 8 is 3 marks)

9 Here are the first five terms of a sequence.

3 8 13 18 23

(a) Write down the next term of this sequence.

.....

(1)

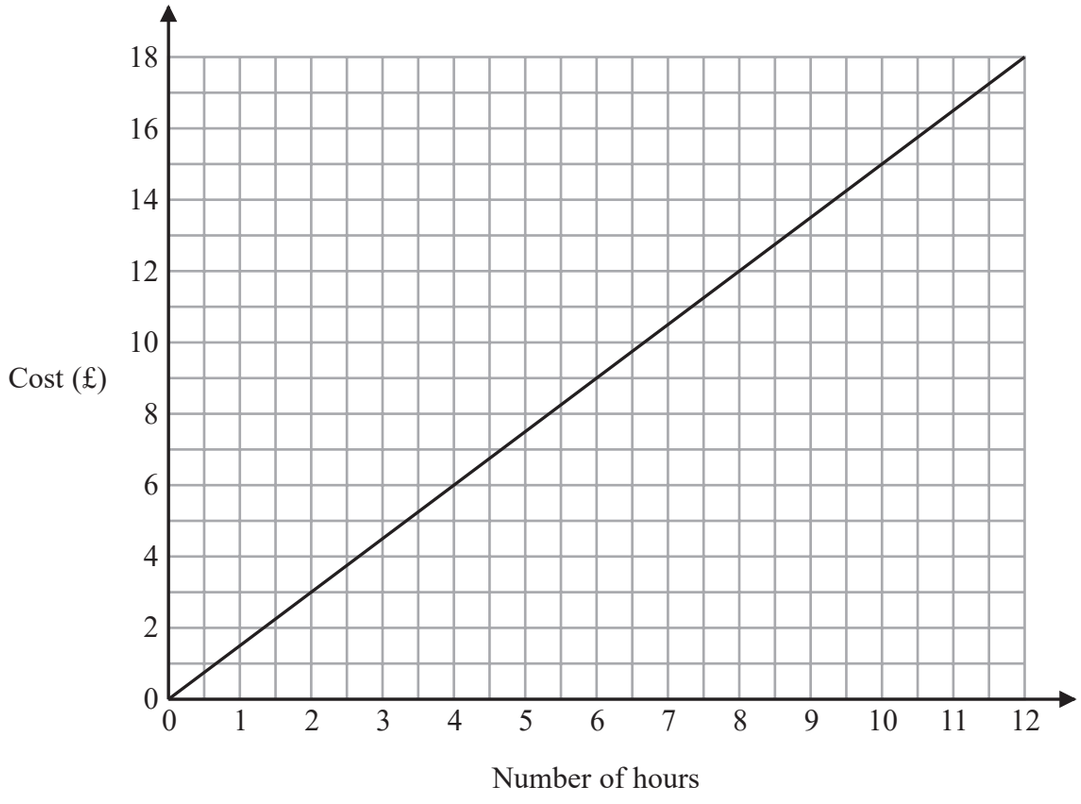
(b) Write down the ratio of the second term to the fourth term.
Give your ratio in its simplest form.

.....

(2)

(Total for Question 9 is 3 marks)

10 This graph can be used to find the cost of parking a car in a car park for up to 12 hours.



(a) Use the graph to find the cost of parking a car for 4 hours.

£.....

(1)

Justin drives into the car park at 08 00 in the morning.
When he drives out of the car park he has to pay £9

(b) At what time does Justin drive out of the car park?

.....

(3)

(Total for Question 10 is 4 marks)

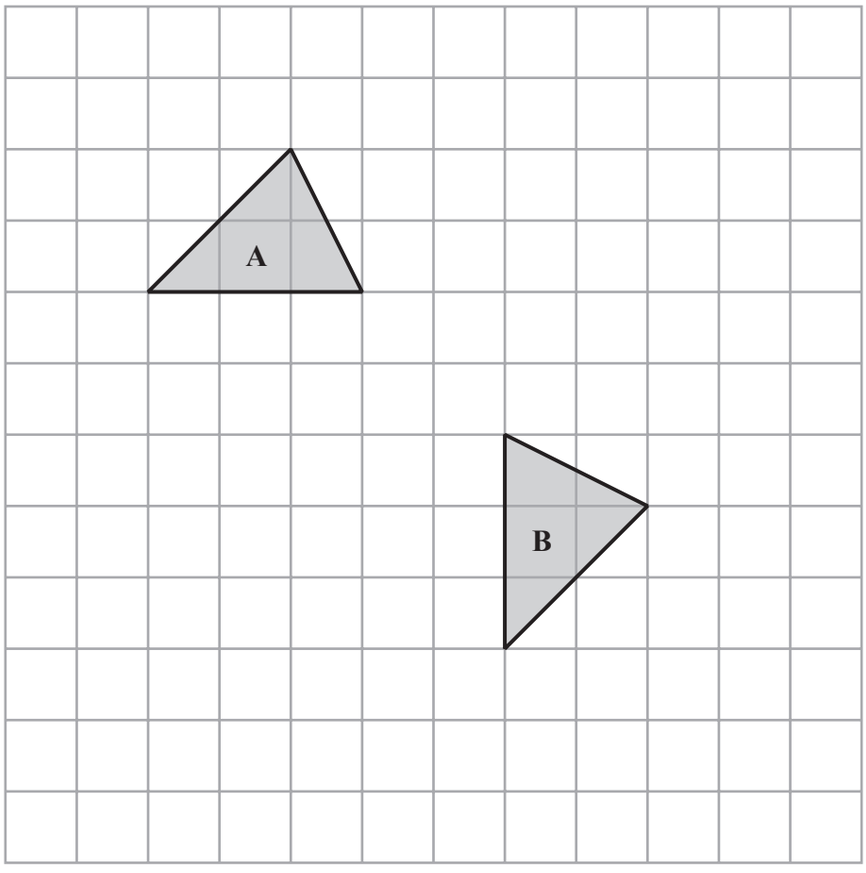
11 The table shows information about the weights of the people in a hotel lift.

Weight	Number of people
40 kg	1
50 kg	2
60 kg	4
70 kg	5
80 kg	3
90 kg	1

Show that the total weight of the people in the lift is less than 1200 kg.

(Total for Question 11 is 3 marks)

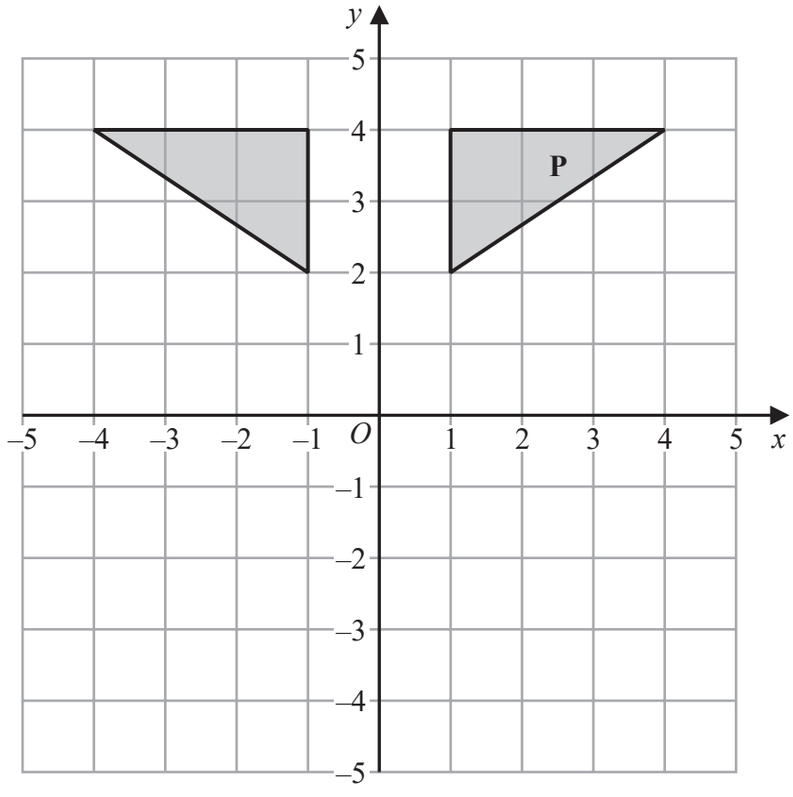
12 Shape **A** is reflected in a mirror line to give shape **B**.



(a) On the grid, draw the mirror line.

(1)

(b) Alex is asked to reflect shape **P** in the x-axis.
Here is the diagram Alex draws.



Explain the mistake Alex has made.

(1)

(Total for Question 12 is 2 marks)

13 There are 50 teachers in a school.

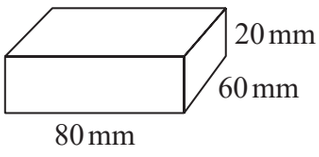
This is $\frac{1}{16}$ of the total number of people in the school.

Work out the total number of people in the school.

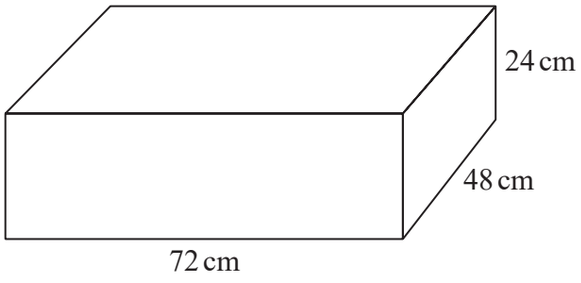
.....

(Total for Question 13 is 2 marks)

14 Packets of sweets are put into boxes.



Packet



Box

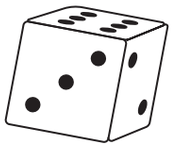
Each packet is a cuboid, 80 mm by 60 mm by 20 mm.
Each box is a cuboid, 72 cm by 48 cm by 24 cm.

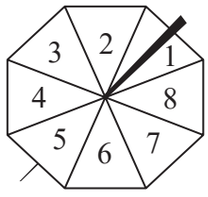
Work out the greatest number of packets that can be put into each box.

.....

(Total for Question 14 is 4 marks)

15 Here is a fair ordinary dice and a fair 8-sided spinner.





Charlie throws the dice once and spins the spinner once.

Is Charlie more likely to get

a number less than 3 on the dice
or a number greater than 5 on the spinner?

You must show all your working.

(Total for Question 15 is 3 marks)

16 Paulo drives at an average speed of 56 km / h for 1 hour 45 minutes.

Work out the distance Paulo drives.

..... km

(Total for Question 16 is 3 marks)

17 There are 3 cinemas **A**, **B** and **C**.

The mean number of seats per cinema is 380

There are 350 seats in cinema **A**.
There are 250 seats in cinema **B**.

Work out the number of seats in cinema **C**.

.....

(Total for Question 17 is 4 marks)

18 Asha buys 180 cans of cola.

The cans are sold in packs.
There are 12 cans in each pack.
Each pack costs £3

(a) Work out the total cost of the cola Asha buys.

£.....

(3)

Ethan buys a box of 24 cans of lemonade for £7
There are 330 m*l* of lemonade in each can.

(b) Work out the cost of 100 m*l* of lemonade.
Give your answer correct to the nearest penny.

.....p

(3)

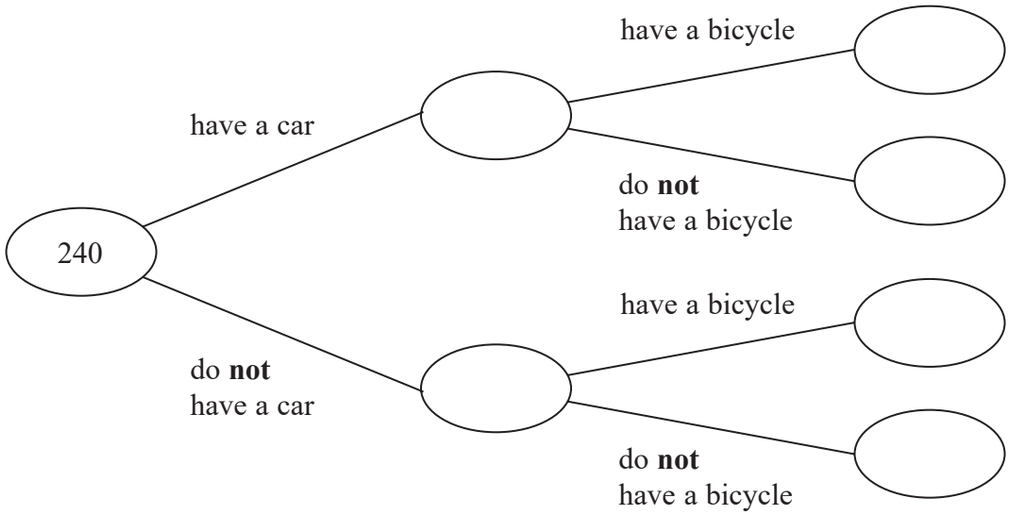
(Total for Question 18 is 6 marks)

19 240 people work at a factory.

Of these people

150 have a car
110 have a bicycle
65 of the people who have a bicycle do **not** have a car.

(a) Use this information to complete the frequency tree.



(3)

(b) What percentage of the 150 people who have a car also have a bicycle?

.....%

(2)

(Total for Question 19 is 5 marks)

20 (a) Work out the value of $\dfrac{25 - \sqrt{43.87}}{6 + 2.1^2}$

Write down all the figures on your calculator display.

.....

(2)

(b) Work out the value of the reciprocal of 0.625

.....

(1)

(Total for Question 20 is 3 marks)

21 Write 60 as a product of its prime factors.

.....

(Total for Question 21 is 2 marks)

22 There are 48 counters in a bag.
There are only red counters and blue counters in the bag.

number of red counters : number of blue counters = 1 : 2

Helen has to work out how many red counters are in the bag.

She says,

"There are 24 red counters in the bag because 1 is half of 2 and 24 is half of 48"

Is Helen correct?
You must give a reason for your answer.

(Total for Question 22 is 1 mark)

23 $-2 \leqslant n < 5$

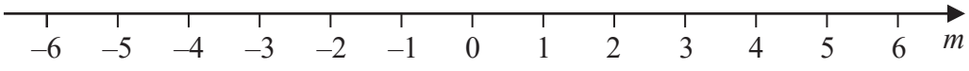
n is an integer.

(a) Write down the greatest possible value of n.

.....

(1)

(b) On the number line below, show the inequality $-4 \leqslant m < 1$



(2)

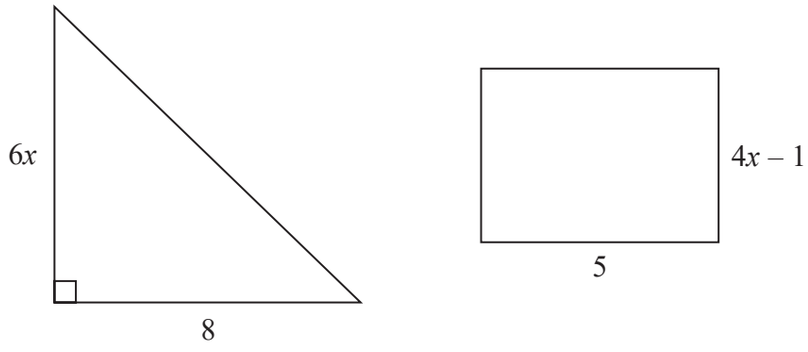
(c) Solve $\frac{2}{5}g - 4 < 6$

.....

(3)

(Total for Question 23 is 6 marks)

24 Here is a triangle and a rectangle.



All measurements are in centimetres.

The area of the triangle is $10\,cm^2$ greater than the area of the rectangle.

Work out the value of x.

$x =$ .....

(Total for Question 24 is 4 marks)

25 Last year a family recycled 800 kg of household waste.
57% of this waste was paper and glass.

weight of paper recycled : weight of glass recycled = 12 : 7

Calculate the weight of glass the family recycled.

..... kg

(Total for Question 25 is 3 marks)

26 A number, d, is rounded to 1 decimal place.
The result is 12.7

Complete the error interval for d.

..... $\leqslant d <$ .....

(Total for Question 26 is 2 marks)

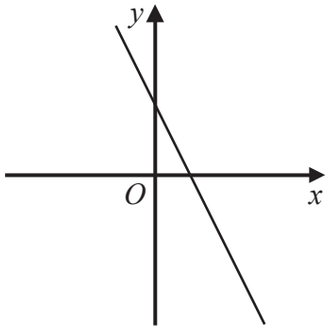
27 Tamsin buys a house with a value of £150 000
The value of Tamsin's house increases by 4% each year.

Rachel buys a house with a value of £160 000
The value of Rachel's house increases by 1.5% each year.

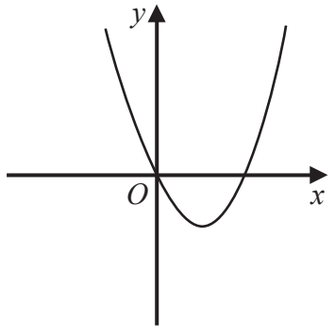
At the end of 2 years, whose house has the greater value?
You must show how you get your answer.

(Total for Question 27 is 4 marks)

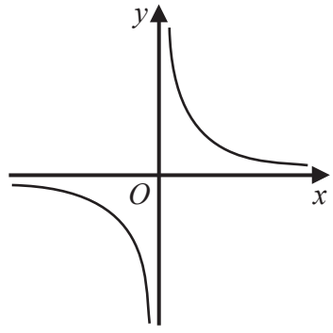
28 Here are five graphs.



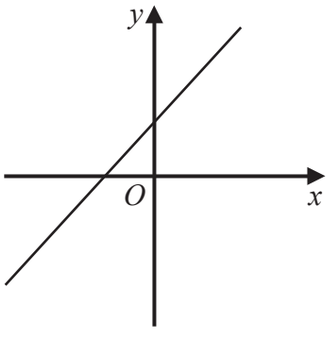
A



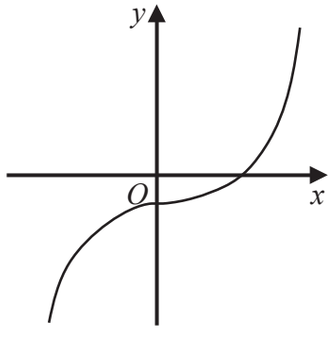
B



C



D



E

The table shows the equations of these graphs.

Equation	Graph
$y = x^2 - 4x$	
$y = x + 3$	
$y = x^3 - 2$	
$y = \frac{1}{x}$	
$y = 5 - 2x$	

Match the letter of each graph with its equation.

(Total for Question 28 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

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