

Write your name here

Surname

Other names

**Pearson Edexcel**  
**Level 1/Level 2 GCSE (9 - 1)**

Centre Number

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Candidate Number

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# Mathematics

## Paper 3 (Calculator)

**Foundation Tier**

Mock Set 3 – Autumn 2017

**Time: 1 hour 30 minutes**

Paper Reference

**1MA1/3F**

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. 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  $\pi$  button, take the value of  $\pi$  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.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Pearson

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1  $\frac{3}{5}$  of the people at a tennis club are women.

The rest of the people are men.

What fraction of the people are men?



.....  
(Total for Question 1 is 1 mark)

- 2 Change 350 centimetres into metres.



..... metres

(Total for Question 2 is 1 mark)

- 3 Here is a list of fractions.

$$\frac{3}{9} \quad \frac{5}{15} \quad \frac{7}{21} \quad \frac{9}{30} \quad \frac{15}{45}$$



One of these fractions is **not** equivalent to  $\frac{1}{3}$

Which fraction?

.....  
(Total for Question 3 is 1 mark)

- 4 One evening the temperature was  $-7^{\circ}\text{C}$ .  
By midnight the temperature had dropped by  $5^{\circ}\text{C}$ .

What was the temperature at midnight?



..... $^{\circ}\text{C}$

(Total for Question 4 is 1 mark)

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5 Here is part of a train timetable from Lostock to Preston.

Lostock	07 46	08 16		08 46	08 57
Horwich	07 50	08 20	08 39	08 50	09 01
Blackrod	07 53			08 53	
Adlington	07 57	08 25		08 57	
Chorley	08 02	08 30	08 47	09 02	09 09
Buckshaw	08 06	08 33		09 05	
Leyland	08 15	08 40		09 12	
Preston	08 20	08 49	08 59	09 17	09 22

(a) How long should the 07 46 train take to go from Lostock to Buckshaw?



..... minutes  
(1)

Ariz wants to go from Horwich to Leyland by train.  
He gets to the station at Horwich at 08 30

(b) What is the earliest time he can get to Leyland?

.....  
(1)

Mike wants to go from Blackrod to Preston by train.  
He needs to get to Preston by 09 25

(c) What is the latest train he can get from Blackrod?

.....  
(1)

(Total for Question 5 is 3 marks)

6 1 kg = 2.2 pounds

Change 319 pounds to kg.



..... kg

(Total for Question 6 is 2 marks)





7 Mary, Bianka and Steve are picking apples.

Mary picks 264 apples.

$\frac{1}{6}$  of these apples are green.

Bianka picks 150 apples.

28% of these apples are green.

Steve picks 340 apples.

15% of these apples are green.

Who picks the most green apples?

You must show all of your working.

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(Total for Question 7 is 4 marks)



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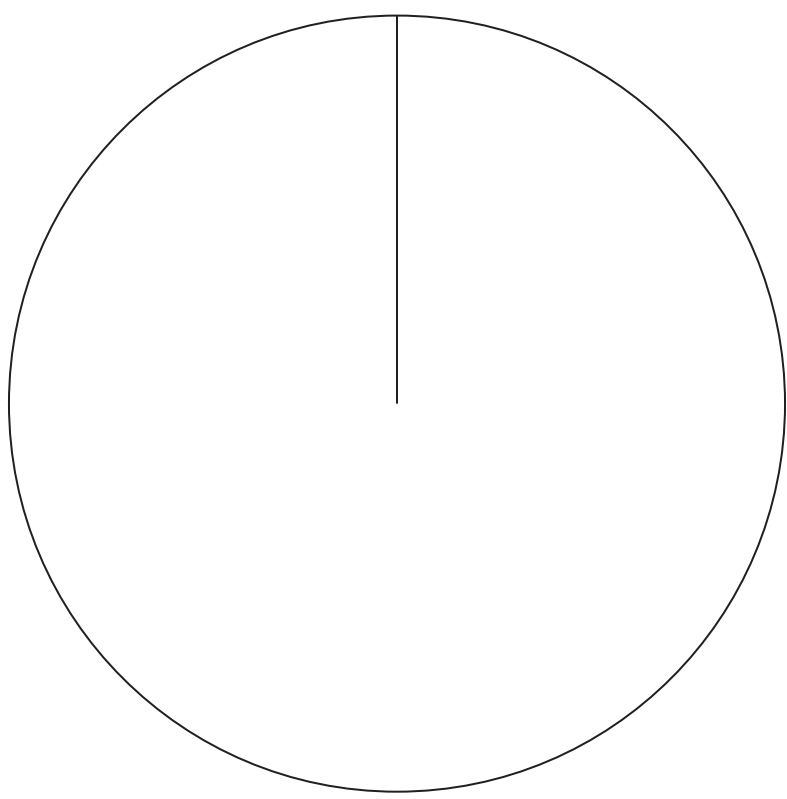


8 Sharon asked each of her friends to name their favourite Olympic sport.

The table below shows information about their answers.

Sport	Frequency
athletics	13
cycling	17
swimming	8
gymnastics	7

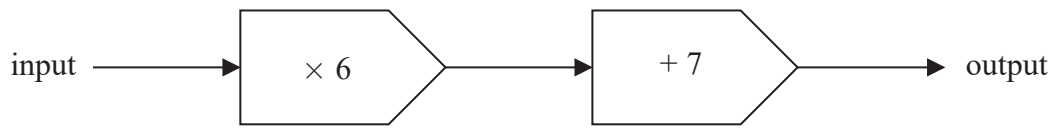
Draw an accurate pie chart for this information.



(Total for Question 8 is 3 marks)



9 Here is a number machine.



(a) Find the output when the input is 6

.....  
(1)

(b) Find the output when the input is  $-4$

.....  
(1)

(c) Find the input when the output is 79

.....  
(2)

(Total for Question 9 is 4 marks)

10 400 g of raspberries and 300 g of strawberries cost a total of £7.46  
500 g of strawberries cost £4.10



Work out the total cost of 200 g of raspberries and 200 g of strawberries.

£.....

(Total for Question 10 is 4 marks)

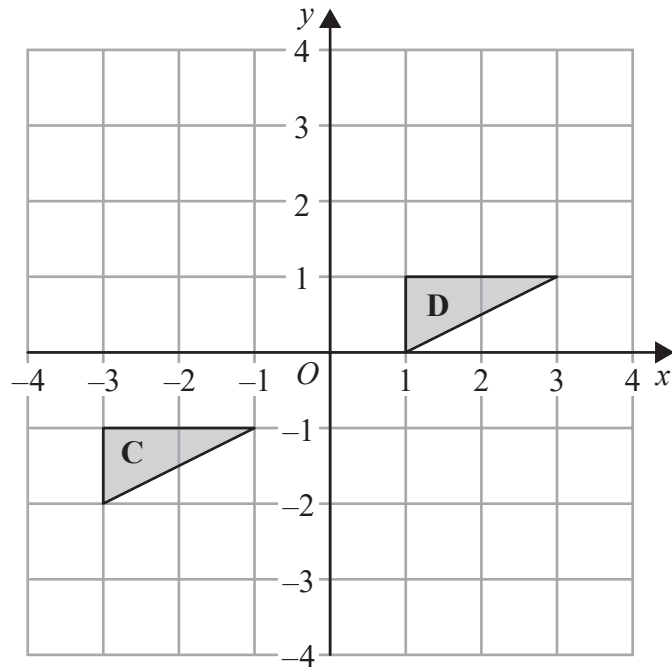
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11



Describe fully the single transformation that maps triangle C onto triangle D.

.....

.....

(Total for Question 11 is 2 marks)

12 Put a pair of brackets in each statement to make the statement true.



(i)  $2 \times 7^2 - 2 = 94$

(1)

(ii)  $16 \div 2 + 6 + 2 = 4$

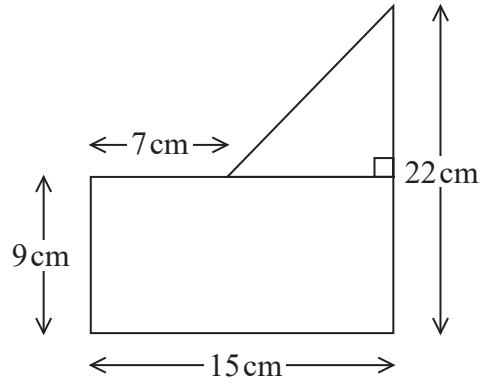
(1)

(Total for Question 12 is 2 marks)





13 Here is a shape made from a rectangle and a triangle.



Work out the total area of the shape.

.....cm<sup>2</sup>

(Total for Question 13 is 3 marks)

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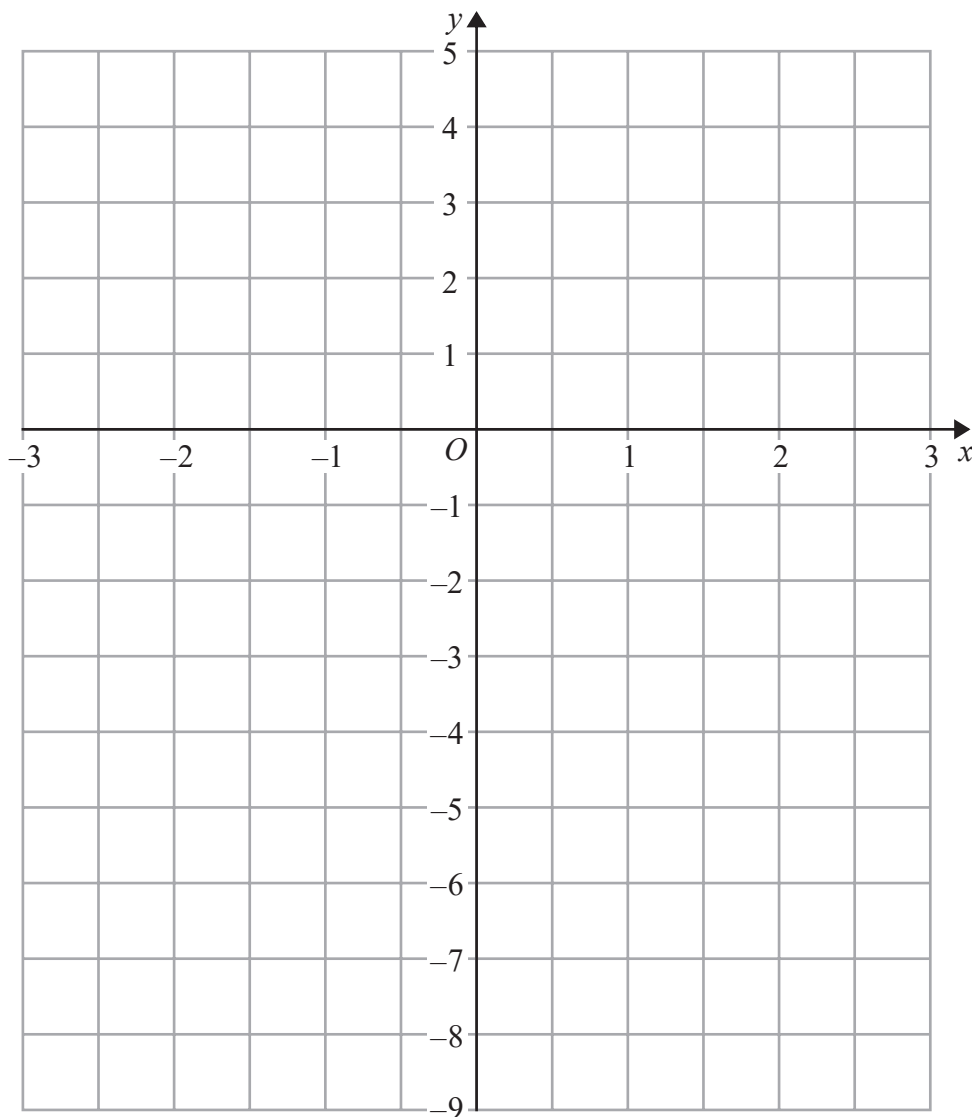
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14 On the grid, draw the graph of  $y = 2x - 2$  for values of  $x$  from  $-3$  to  $3$



(Total for Question 14 is 3 marks)

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S 5 7 4 9 5 A 0 9 2 4



15 (a) Work out  $\frac{4.36 + 2.8^3}{6.8 - 5.42}$

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

..... (2)

(b) Give your answer to part (a) correct to 1 decimal place.

..... (1)

**(Total for Question 15 is 3 marks)**

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16 The table shows information about the number of children in each of 40 families.

Number of children	Frequency
0	6
1	13
2	12
3	7
4	2
5 or more	0

(a) Find the median number of children.

.....  
(1)

(b) Work out the total number of children.

.....  
(2)

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



17 (a) Expand  $2a(a + 7)$



.....  
(1)

(b) Factorise  $14b - 7$

.....  
(1)

(c) Solve  $9(c - 6) = 63$

$c =$  .....  
(2)

(d) Simplify  $3y^2 \times 4y^3$

.....  
(1)

**(Total for Question 17 is 5 marks)**



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18 Claire buys a new car for £5700

She pays a deposit of 12%

She then pays the rest of the cost in 15 equal monthly payments.

How much is each monthly payment?

£.....

(Total for Question 18 is 3 marks)



19 (a) Write 168 as a product of its prime factors.  
You must show your working.



.....  
(3)

(b) Find the highest common factor (HCF) of 168 and 180

.....  
(2)

**(Total for Question 19 is 5 marks)**

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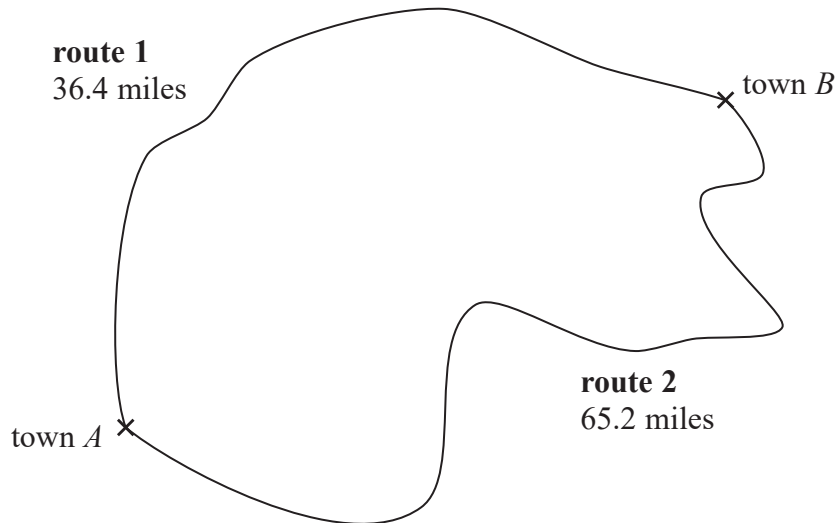
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20 Eric and Geraldine both drove from town *A* to town *B*.



Both Eric and Geraldine left town *A* at 2 pm.

Eric drove on route 1  
He got to town *B* at 2 48 pm.

Geraldine drove on route 2  
She got to town *B* at 3 25 pm.

Who drove at the greater average speed?  
You must show all your working.

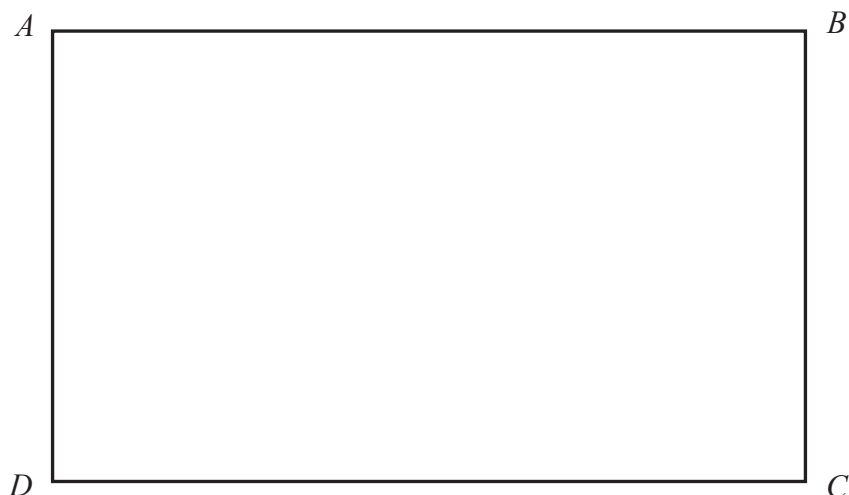
(Total for Question 20 is 3 marks)



S 5 7 4 9 5 A 0 1 5 2 4



21 Here is an accurate scale drawing of a school playground.



1 cm represents 2 m

Nasim is going to put a seat in the playground.

The seat has to be

- less than 9 m from  $C$
- closer to  $BC$  than to  $AB$
- more than 4 m from  $AB$

Show, by shading on the diagram, the region where Nasim can put the seat.

(Total for Question 21 is 4 marks)

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22 There are only red counters, blue counters and green counters in a bag.

number of red counters : number of blue counters : number of green counters = 1 : 3 : 7

A counter is going to be taken at random from the bag.



(a) Complete the table below to show each of the probabilities that the counter will be red or blue or green.

<b>Colour</b>	red	blue	green
<b>Probability</b>			

(2)

Jamie takes at random a counter from the bag and records the colour of the counter. He then puts the counter back in the bag.

Jamie does this a number of times. He records a total of 68 blue counters.

(b) Work out an estimate for the total number of times Jamie takes a counter from the bag.

.....  
(2)

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





23 Maryam is trying to expand and simplify  $(n - 2)^2$   
Here is her working.

$$\begin{aligned}(n - 2)^2 &= (n - 2)(n - 2) \\ &= n^2 - 2n - 2n - 4 \\ &= n^2 - 4n - 4\end{aligned}$$

Maryam's answer is wrong.

(a) Find Maryam's mistake.

(1)

Josh is trying to factorise  $x^2 - 6x + 8$   
His reasoning is,

because  $4 \times 2 = 8$   
and  $4 + 2 = 6$

then  $x^2 - 6x + 8 = (x + 4)(x + 2)$

(b) Explain what is wrong with Josh's reasoning.

(1)

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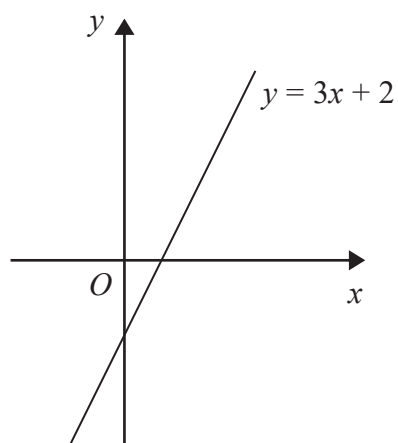


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Shona has to draw the line with equation  $y = 3x + 2$   
Here is her line.



(c) Explain why Shona's line **cannot** be correct.

.....

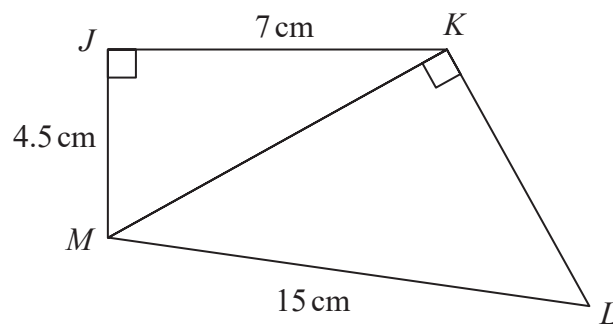
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(1)

(Total for Question 23 is 3 marks)



24 The diagram shows a quadrilateral  $JKLM$ .



Work out the size of angle  $KLM$ .  
Give your answer correct to 3 significant figures.

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(Total for Question 24 is 4 marks)



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25 Neil bought a house for £235 000

In the first year the value of the house depreciated by 4%

In each of years 2 and 3 the value of the house increased by 6%

Work out the value of the house at the end of year 3

£.....

(Total for Question 25 is 3 marks)

26 (a) Write  $2.673 \times 10^4$  as an ordinary number.

.....  
(1)

(b) Write 0.0704 in standard form.

.....  
(1)

(c) Calculate  $(4.515 \times 10^6) \div (3.01 \times 10^{-2})$   
Give your answer in standard form.

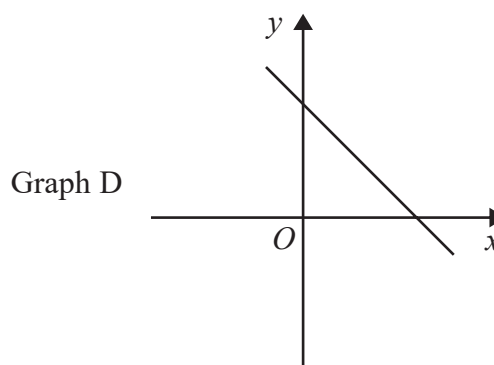
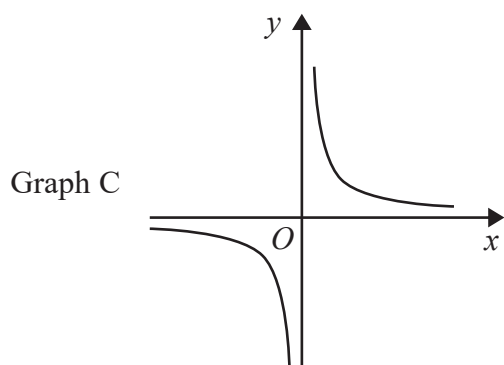
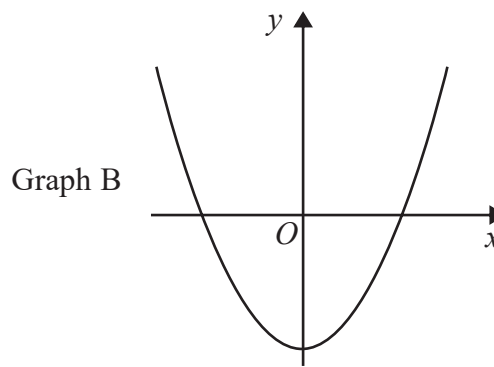
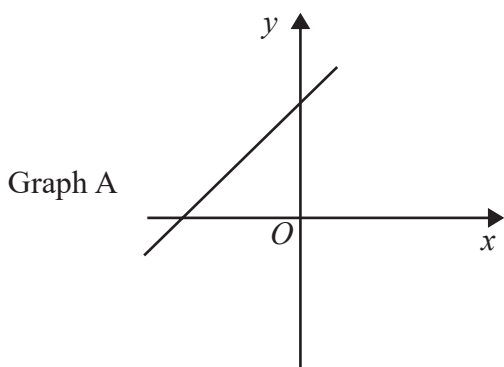
.....  
(2)

(Total for Question 26 is 4 marks)





27 Here are four graphs.



Each of the equations in the table is the equation of one of the graphs.

Complete the table.

Equation	Letter of graph
$y = x^2 - 7$	
$y = 3 - 2x$	
$y = 2x + 3$	
$y = \frac{1}{x}$	

(Total for Question 27 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

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