edexcel

GCSE Mathematics Practice Tests: Set 3

Paper 3F (Calculator)

Time: 1 hour 30 minutes

You should have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator.

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*.
- **Calculators may be used.**
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

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.

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. Here is a list of numbers.

6 9 10 15 19 27

From the numbers in the list write down

(i) the square number,

.....

(ii) the prime number,

.....

(iii) the cube number,

.....

(Total 3 marks)

---

2. Nathan thinks of a number.
He doubles the number.
He adds 5

His answer is 17

What number does Nathan think of?

.....

(Total 3 marks)

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3. Sally makes a fair 8-sided spinner for a game.

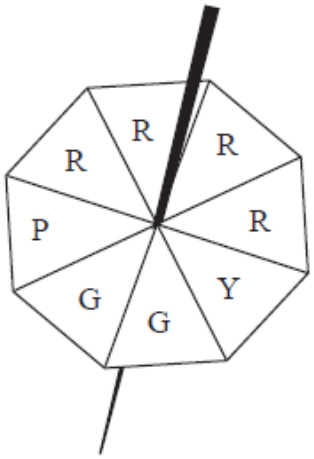


Diagram **NOT** accurately drawn

Sally is going to spin the spinner once.
The spinner will land on one of the letters shown in the diagram.

impossible	unlikely	evens	likely	certain

(*a*) From the list above, write down the word that best describes the likelihood

(i) that the spinner will land on the letter Y

.....

(ii) that the spinner will land on the letter R

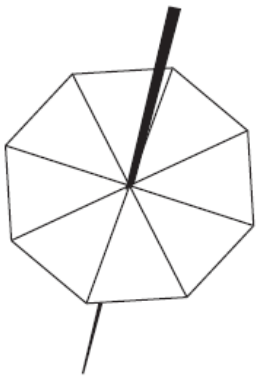
.....

(iii) that the spinner will land on the letter T

.....

(3)

Sally makes a different fair 8-sided spinner.
The letters A, B, C and D will be on the spinner.



The probability that the spinner will land on A is twice the probability that the spinner will land on B.

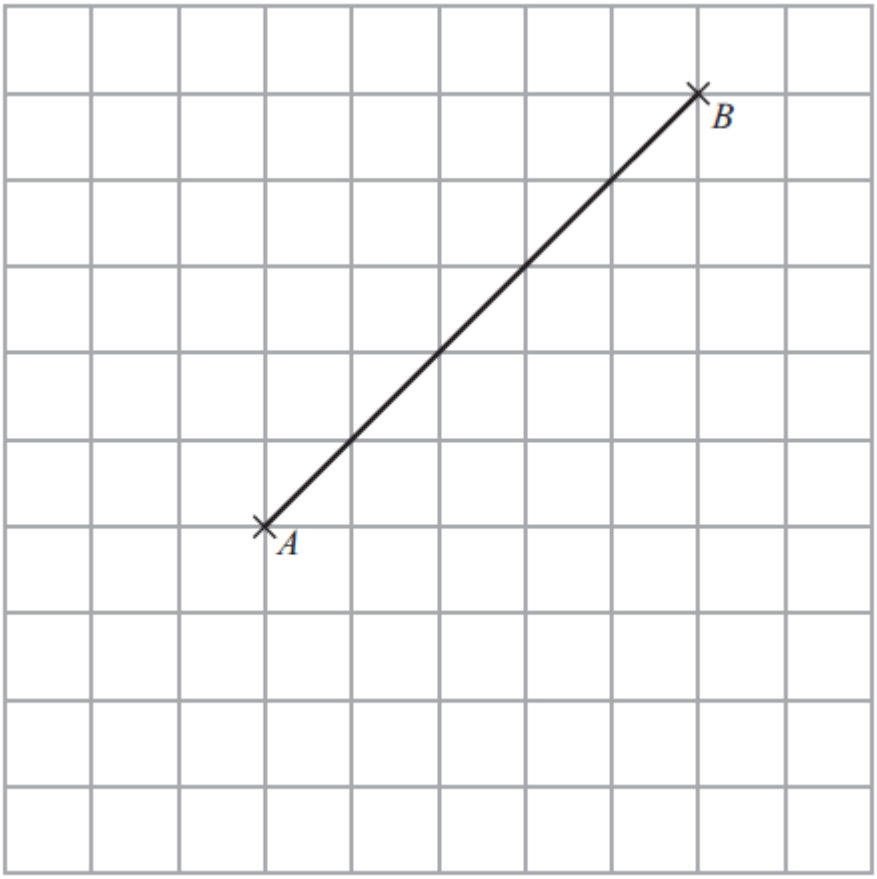
The probability that the spinner will land on C is the same as the probability that the spinner will land on D.

(*b*) Use this information to complete the spinner.

(2)

(Total 5 marks)

4.



On the grid, draw a line that is both

parallel to the line *AB*

and the same length as the line *AB*.

(Total 2 mark)

---

5. (*a*) Work out 40% of 20.

.....

(2)

Here are four numbers.

$$0.43 \qquad \frac{3}{7} \qquad 43.8\% \qquad \frac{7}{16}$$

(*b*) Write these numbers in order of size.
Start with the smallest number.

.....

(2)

(Total 4 mark)

---

6. Sarah says,

"When square a prime number you always get an odd number."

(*a*) Write down one example to show that Sarah is wrong.

.....

(1)

Emily says,

"The lowest number that 3 and 6 both divide into exactly is 18"

(*b*) Is Emily correct?
You must give a reason for your answer.

.....

.....

(1)

(Total 2 mark)

---

7 Batteries are sold in packets and in boxes.

There are 4 batteries in a packet.
There are 20 batteries in a box.

Derek buys one box of batteries.
He takes t batteries out of the box.

(a) Write down an expression, in terms of t, for the number of batteries left in the box.

.....

(1)

Sameena buys x packets of batteries and y boxes of batteries.

(b) Write down an expression, in terms of x and y, for the total number of batteries Sameena buys.

.....

(2)

(Total 3 marks)

8 People can buy three types of plane tickets.

They can buy

an Economy ticket
a Premium ticket
or a Business ticket

200 people buy plane tickets.

92 males buy tickets
30 of the males buy Business tickets
62 females buy Economy tickets

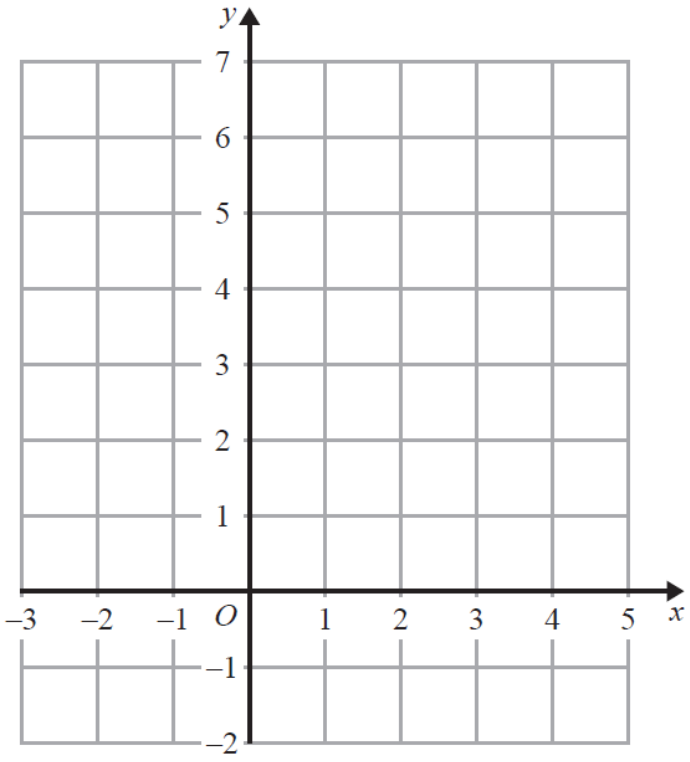
A total of 44 people buy Business tickets.
A total of 60 people buy Premium tickets.

How many males buy Premium tickets?
You must show all your working.

.....

(Total 4 marks)

9 On the grid, draw the graph of $y = \frac{1}{2}x + 3$ for values of x from –2 to 4.



(Total 3 marks)

10 Here are the ingredients needed to make 10 pancakes.

Pancakes

Ingredients to make **10** pancakes

300 m*l*	of milk
120 g	of flour
2	eggs

Matthew makes 30 pancakes.

(*a*) Work out how much flour he uses.

..... g

(2)

Tara makes some pancakes.
She uses 750 m*l* of milk.

(*b*) Work out how many pancakes she makes.

.....

(2)

(Total 4 mark)

11. £360 is shared in the ratio 1 : 3 : 5

Work out the difference between the largest share and the smallest share.

£ .....

(Total 3 marks)

---

12. (*a*) Work out the output for this number machine.



.....

(2)

(*b*) Work out the input for this number machine.



.....

(2)

(*c*) The input for this number machine is *m*.



Find an expression, in terms of *m*, for the output.

.....

(2)

(*d*) The output for this number machine is *n*.



Find an expression, in terms of *m*, for the output.

.....

(2)

(Total 8 marks)

13. Jenny wants to record 15 minutes of songs for a film.
The table shows the playing time of 3 songs she has recorded.

Song	Playing time
A	4 minutes and 33 seconds
B	3 minutes and 42 seconds
C	3 minutes and 06 seconds

How much more time, in minutes and seconds, does she need to record?

..... minutes ..... seconds

(Total 4 marks)

14. The table gives some information about the costs of posting large letters.

First Class Post – Delivery takes 1 to 2 days	
Weight (g)	**Cost**
50 – 100	50p
101 – 250	72p
251 – 500	£1.04
501 – 750	£1.51

Second Class Post – Delivery takes 3 to 5 days	
Weight (g)	**Cost**
50 – 100	40p
101 – 250	59p
251 – 500	85p
501 – 750	£1.23

Leroy works for a company.
In January he sends some large letters by first class post.

The table gives information about numbers and weights of the large letters.

Weight (g)	Number of large letters
50 – 100	28
101 – 250	32
251 – 500	50
501 – 750	18

(*a*) Calculate the total cost of sending these large letters by first class post.

£ .....

(3)

In February, Leroy is going to send some more large letters.

The table gives information about the weights and numbers of these large letters.

Weight (g)	**Number of large letters**
50 – 100	32
101 – 250	40
251 – 500	68
501 – 750	34

Leroy can use either first class post or second class post.
He thinks it will cost £20 less to send the letters by second class post.

(*b*) Is Leroy correct?
You must show your working.

(4)

(Total 7 marks)

15. $-2 < n \leq 3$
n is an integer.

(*a*) Write down all the possible values of n.

.....

(2)

x is a number.
Another number is 9 greater than x.
Both numbers are whole numbers.

The total of the two numbers is less than 60

(*b*) Find the greatest possible value of x.

.....

(3)

(Total 5 marks)

---

16. The nth term of sequence A is $3n - 2$
The nth term of sequence B is $10 - 2n$

Sally says there is only one number that is in both sequence A and sequence B.

Is Sally right?
You must explain your answer.

(Total 2 marks)

17.

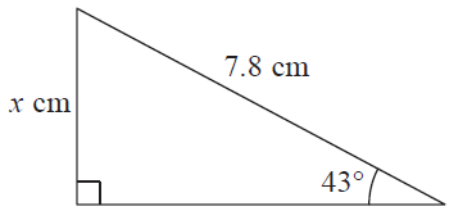


Diagram **NOT** accurately drawn

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

x = ...

(Total 3 marks)

18. Here is a formula used to work out the speed, v mph, of a car making an emergency stop.

$$v = \sqrt{21d}$$

d feet is the length of the mark the car's tyres make on the road when making an emergency stop.

A car makes an emergency stop.
The car's tyres make a mark 90 feet long.

(*a*) Work out the speed of the car.
Give your answer correct to the nearest whole number.

..... mph

(2)

A car made an emergency stop.
The car's speed was 50 mph.

(*b*) Work out the length of the mark on the road.
Give your answer correct to the nearest whole number.

..... feet

(3)

(Total 5 marks)

19. Andy has some counters.

15% of the counters are red.

$\frac{2}{5}$ of the counters are blue.

The rest of the counters are yellow.

There are 27 yellow counters.

How many blue counters are there?

.....

(Total 5 marks)

20. Here is a diagram of Gareth's lawn.

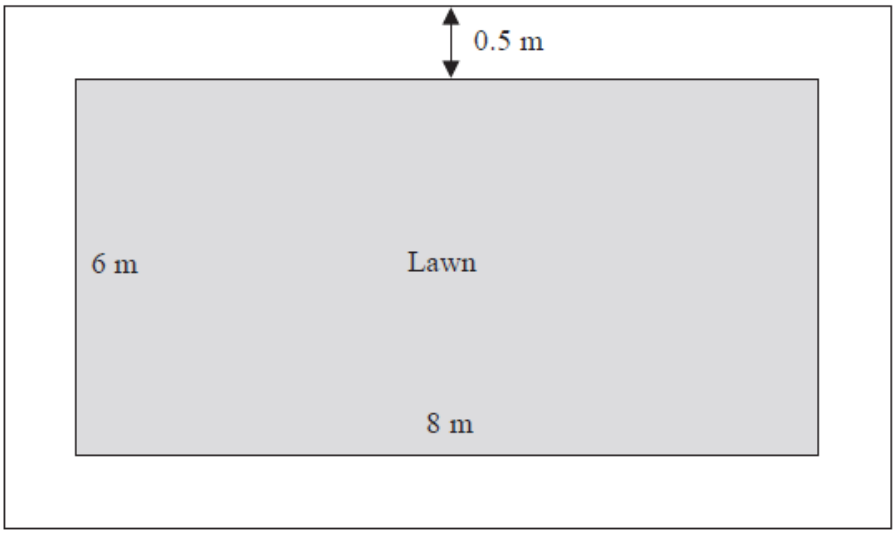


Diagram **NOT** accurately drawn

The lawn is in the shape of a rectangle. The length of the lawn is 8 m.
The width of the lawn is 6 m.

There is a path all the way around the lawn. The path is made from paving slabs.
Each paving slab is a square 0.5 m by 0.5 m. The width of the path is 0.5 m.

Work out the number of paving slabs in the path.

.....

(Total 3 marks)

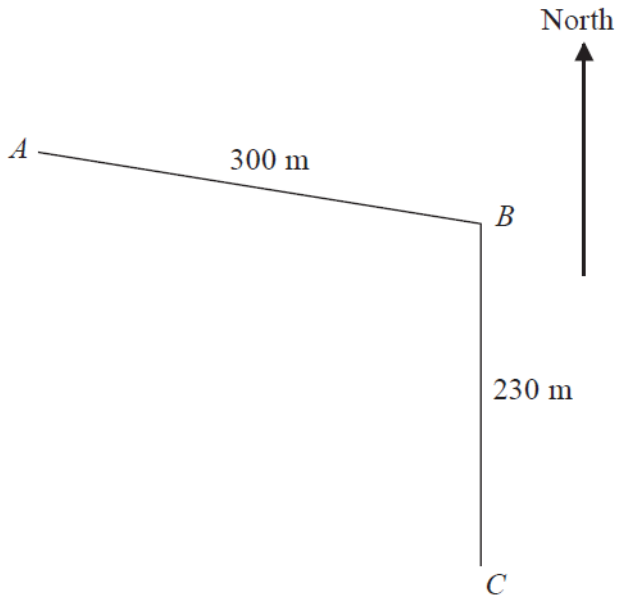
21. The diagram shows an accurate scale drawing of part of the boundary of a field.
The complete boundary of the field is in the shape of a quadrilateral *ABCD*.

AB = 300 metres.
BC = 230 metres.
Point *B* is due north of point *C*.

The scale of the diagram is 1 cm to 50 metres.

The bearing of *D* from *C* is 260°.
AD = 480 metres.

Complete the scale drawing of the boundary of the field.
Mark the position of *D*.



(Total 2 marks)

TOTAL FOR PAPER IS 80 MARKS