

GCSE Mathematics

Practice Tests: Set 17

Paper 2F/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. Tracing paper may be used.

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.

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Sabbir has some boxes of bananas and some sacks of tomatoes.

The weight of each box of bananas is the same and the weight of each sack of tomatoes is the same.

The weight of 3 boxes of bananas is 42 kg.

The weight of 8 sacks of tomatoes is 68 kg.

Work out the total weight of 9 boxes of bananas and 15 sacks of tomatoes.

..... kg

(Total for Question 1 is 3 marks)

2 Write these fractions in order of size.

Start with the smallest fraction.

$$\frac{3}{4} \quad \frac{5}{6} \quad \frac{1}{2} \quad \frac{4}{5}$$

.....

(Total for Question 2 is 2 marks)

- 3 Rose and Haydn share £250 in the ratio 2 : 3
Rose gives all her share of the money to charity.
Haydn gives 42% of his share of the money to charity.
Rose gives more money to charity than Haydn gives to charity.
Work out how much more.

£.....
(Total for Question 3 is 5 marks)

4 The table gives the length of the coastline, in kilometres, of each of five oceans.

Ocean	Length of coastline (km)
Arctic	4.539×10^4
Atlantic	1.119×10^5
Pacific	1.357×10^5
Indian	6.653×10^4
Southern	1.797×10^4

(a) Which ocean has the greatest length of coastline?

.....
(1)

(b) Calculate the difference between the length of the Atlantic Ocean's coastline and the length of the Southern Ocean's coastline.
Give your answer in standard form.

..... km
(2)

(Total for Question 4 is 3 marks)

- 5 The diagram shows the isosceles triangle ABC in which $AB = AC$

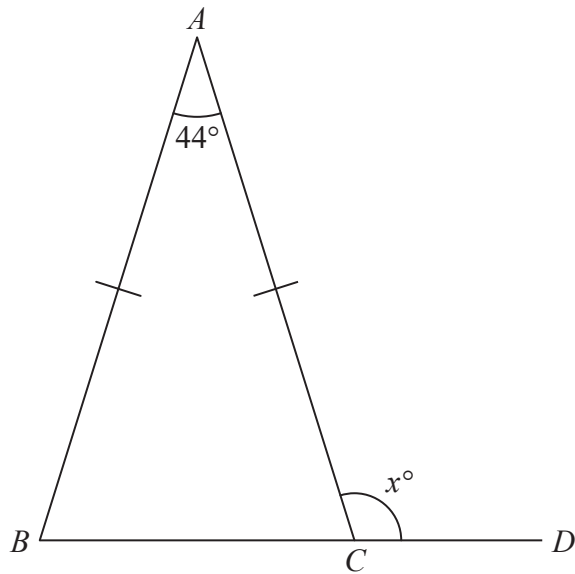


Diagram **NOT**
accurately drawn

BCD is a straight line.

Work out the value of x .

$x = \dots\dots\dots$

(Total for Question 5 is 3 marks)

- 6 Cate asked the 60 members of a leisure centre how many times they had each visited the leisure centre last week.

The table gives information about her results.

Number of visits	Frequency
0	4
1	12
2	17
3	20
4	7

- (a) Write down the mode of the number of visits.

.....
(1)

Cate is going to draw a pie chart for the information in the table.

- (b) Work out the size of the angle in the pie chart for the sector representing 1 visit.

.....°
(2)

35% of the 60 members are aged 50 or over.

- (c) Work out how many of the members are aged 50 or over.

.....
(2)

(Total for Question 6 is 5 marks)

- 7 Iwan is going to buy the following items
- 1 plant pot at £8
 - 3 bags of soil at £4.50 for each bag
 - some packets of seeds at £1.10 for each packet.

Iwan has a total of £30 to spend on these items.

He buys as many packets of seeds as he can.

Work out how much change Iwan should receive.

£.....

(Total for Question 7 is 4 marks)

8 Here is a list of ingredients needed to make 24 currant buns.

Ingredients for 24 currant buns		
100	grams	butter
70	grams	sugar
140	grams	flour
40	grams	currants
30	millilitres	milk
2		eggs

Gina wants to make 60 currant buns.

(a) Work out the weight of butter Gina needs.

..... grams
(2)

Hans wants to make 30 currant buns.

(b) Find the percentage increase in the weight of butter needed to make 30 currant buns rather than 24 currant buns.

.....%
(2)

(Total for Question 8 is 4 marks)

- 9** A train journey from Paris to Amsterdam took 3 hours 24 minutes.
The total distance the train travelled was 433.5 km.

Work out the average speed of the train.
Give your answer in kilometres per hour.

..... km/h

(Total for Question 9 is 3 marks)

- 10** $\frac{5}{9}$ of a number is 14

What is the number?

.....

(2)

(Total for Question 10 is 2 marks)

11 Here are five times, in a single day, using the 24-hour clock.

A	B	C	D	E
11 53	15 20	08 20	18 12	16 45

(a) Write down the letter of the time nearest to 6 pm

.....
(1)

(b) Work out the difference, in hours and minutes, between time A and time E.

..... hours minutes
(2)

Francesco uses the rule below to find the time, in minutes, to cook a chicken in his oven.

<p style="text-align: center;">Number of minutes to cook a chicken Multiply the weight of the chicken, in kg, by 40 and then add 15</p>
--

The clock on Francesco's oven shows time **B**.
Francesco starts cooking a chicken at this time.
He stops cooking the chicken when the clock on his oven shows time **E**.

(c) Work out the weight of the chicken.

..... kg
(3)

(d) Use Francesco's rule to write down a formula for the time, T minutes, to cook a chicken of weight k kilograms.

.....
(2)

(Total for Question 11 is 8 marks)

- 12** In Berlin, a watch costs 120 euros.
In Dubai, the same model of watch costs 600 dirhams.
The currency exchange rates are

Exchange rates		
£1	=	1.16 euros
1 dirham	=	0.24 euros

Calculate the difference between the cost of the watch in Berlin and the cost of the same model of watch in Dubai.
Give your answer in pounds (£) correct to 2 decimal places.

£.....

(Total for Question 12 is 4 marks)

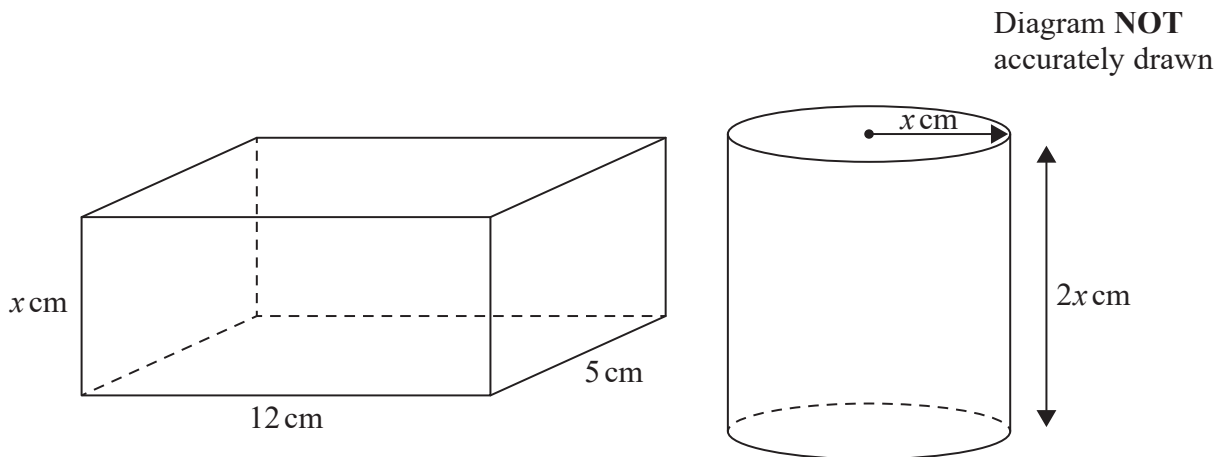
- 13** Kuro invests 50 000 yen for 3 years in a savings account.
She gets 2.4% per year compound interest.

Work out how much money Kuro will have in her savings account at the end of the 3 years.
Give your answer correct to the nearest yen.

..... yen

(Total for Question 13 is 3 marks)

14 The diagram shows a cuboid and a cylinder.



The dimensions of the cuboid are x cm by 12 cm by 5 cm.
 The volume of the cuboid is 270 cm^3

The radius of the cylinder is x cm.
 The height of the cylinder is $2x$ cm.

- (a) Work out the volume of the cylinder.
 Give your answer correct to the nearest whole number.

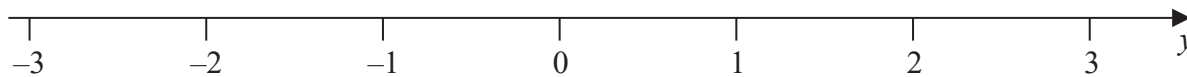
..... cm^3
(3)

- (b) Change 1 m^3 to cm^3

..... cm^3
(1)

(Total for Question 14 is 4 marks)

15 (a) On the number line, show the inequality $-2 \leq y < 1$



(2)

n is an integer.

(b) Write down all the values of n that satisfy $-3.4 < n \leq 2$

.....

(2)

(Total for Question 15 is 4 marks)

- 16 The diagram shows a regular pentagon, $ABCDE$, a regular hexagon, $CFGHID$, and a quadrilateral, $EDIJ$.

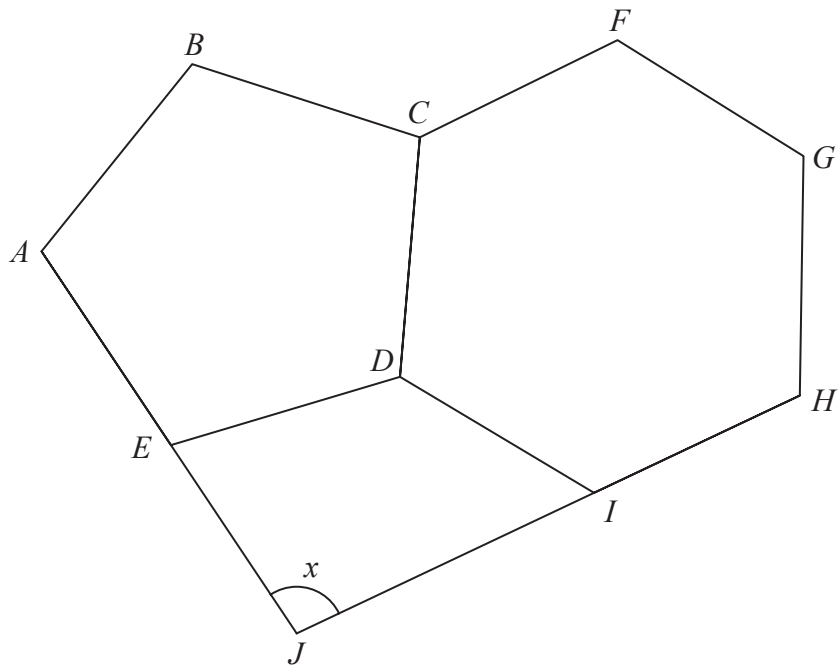


Diagram **NOT** accurately drawn

AEJ and HIJ are straight lines.

Work out the size of the angle marked x .
Show your working clearly.

.....°
(Total for Question 16 is 5 marks)

- 17 On Wednesday, the price of 1 litre of petrol was £1.26
 The price of petrol on Wednesday was 5% more than the price of petrol on the previous Monday.

Calculate the price of 30 litres of petrol on the previous Monday.

£.....

(Total for Question 17 is 3 marks)

- 18 The diagram shows a rectangle $ABCD$ and a semicircle with diameter AB where $AB = 12$ cm. The point E lies on DC and also on the semicircle.

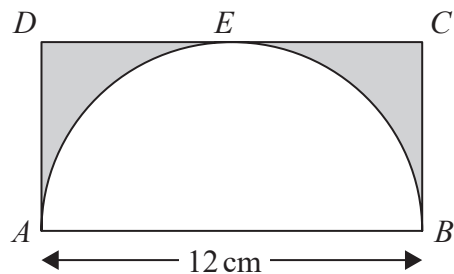


Diagram **NOT** accurately drawn

Work out the area of the shaded region.
 Give your answer correct to 3 significant figures.

..... cm²

(Total for Question 18 is 3 marks)

- 19** A mathematics teacher at a school asked a group of students how far, in kilometres, each student had travelled to get to school that day.

The table gives information about their answers.

Distance travelled (d km)	Number of students
$0 < d \leq 2$	x
$2 < d \leq 4$	11
$4 < d \leq 6$	8
$6 < d \leq 8$	6
$8 < d \leq 10$	5

The teacher calculated that an estimate for the mean distance travelled by the whole group of students was 4.25 km.

Work out the value of x .

Show your working clearly.

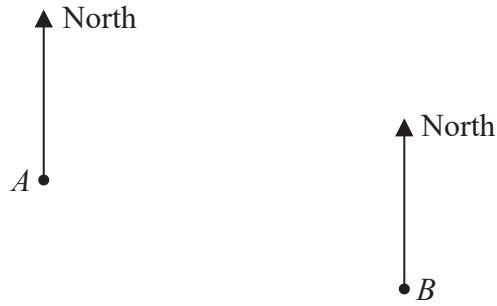
$x = \dots\dots\dots$

(Total for Question 19 is 4 marks)

20 Show that $3\frac{1}{5} \times 1\frac{5}{6} = 5\frac{13}{15}$

(Total for Question 20 is 3 marks)

20 The scale diagram shows the positions of a post office (A) and a police station (B) in a town.



(a) Measure the bearing of B from A .

.....^o
(1)

The town hall is at a position C .
The bearing of A from C is 045°

(b) Calculate the bearing of C from A .

.....^o
(2)

(Total for Question 20 is 3 marks)

- 21 The diagram shows one face of a wall.
This face is in the shape of a pentagon with exactly one line of symmetry.

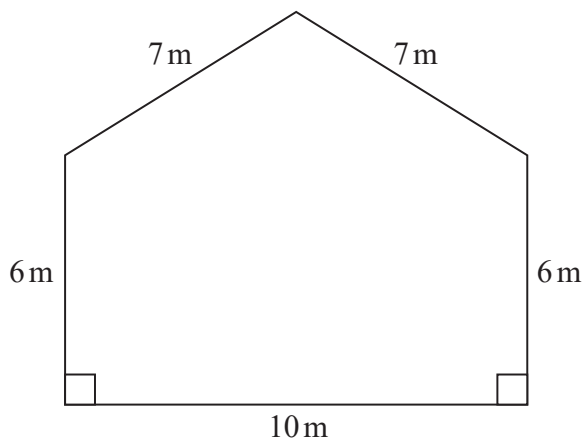


Diagram **NOT**
accurately drawn

Omondi is going to paint this face of the wall once.
He has to buy all the paint that he needs to use.

The paint in each tin of paint Omondi is going to buy will cover 16 m^2 of the face of the wall.

Work out the least number of tins of paint Omondi will need to buy.
Show your working clearly.

.....
(Total for Question 21 is 5 marks)

TOTAL FOR PAPER IS 80 MARKS