

Write your name here:

Surname:	Other Names:
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Mathematics

Practice Papers Set 1

Paper 2 (Calculator)

Foundation Tier

Time: 1 hour 30 minutes

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

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.
- 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

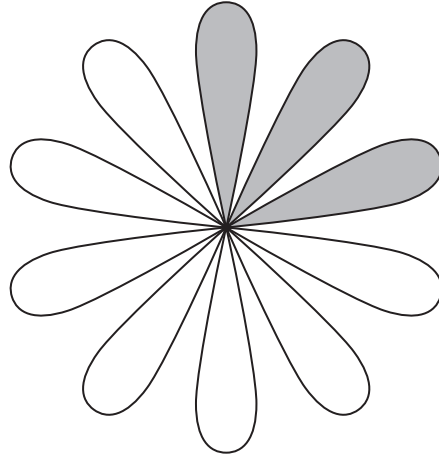
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL TWENTY questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 (a) (i) What percentage of this shape is shaded?



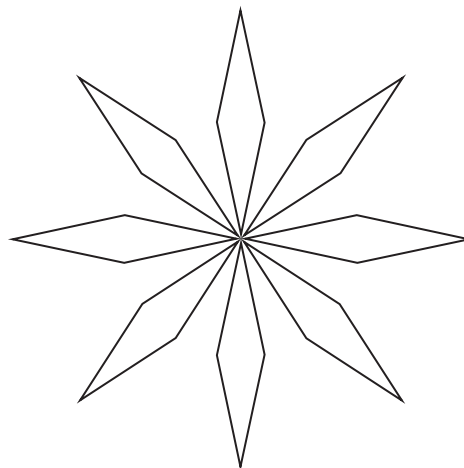
..... %

(ii) What percentage of this shape is unshaded?

..... %

(2)

(b) Shade $\frac{3}{4}$ of this shape.



(1)

(Total for Question 1 is 3 marks)

2 Here is a list of numbers.

11 12 13 14 15 16 17 18 19 20

From the list, write down

(a) a factor of 24

.....
(1)

(b) a multiple of 7

.....
(1)

(c) a square number

.....
(1)

(Total for Question 2 is 3 marks)

3 Here is the number of goals a hockey team scored in each of 10 matches.

3 4 3 2 5 3 5 6 2 4

Find

(i) the median

(ii) the range

(iii) the mean

.....
.....
.....
(Total for Question 3 is 6 marks)

4 The table shows the prices of drinks at Ed's Cafe.

Ed's Cafe			
	Small	Regular	Large
Black coffee	£1.40	£1.80	£2.20
Cappuccino	£1.60	£2.10	£2.60
Latte	£1.60	£2.10	£2.60
Tea	£1.20	£1.50	£1.80
Cola	£1.50	£2.00	£2.40

Helen buys
2 small black coffees
1 regular cappuccino
1 large cola

Helen pays with a £10 note.

(a) Work out how much change Helen should get.

£
(3)

Ed reduces all the prices by 15%.

(b) Work out the reduced price of a large latte.

£
(3)

(Total for Question 4 is 6 marks)

5 Work out the difference in value between $\frac{1}{4}$ and 30%.

.....
(Total for Question 5 is 2 marks)

6

$$1 \text{ euro} = 1.40 \text{ Canadian dollars}$$

- (a) Alain changes 450 euros into Canadian dollars.
How many Canadian dollars should he receive?

..... Canadian dollars
(2)

- (b) Isabella changes 840 Canadian dollars into euros.
How many euros should she receive?

..... euros
(2)

$$1 \text{ euro} = 100 \text{ cents}$$

- (c) How many cents is 1 Canadian dollar worth?

..... cents
(2)

(Total for Question 6 is 6 marks)

7

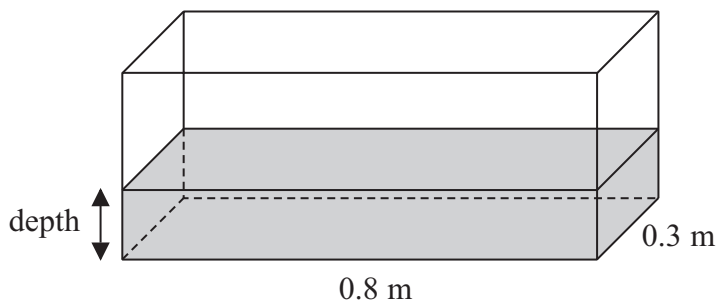


Diagram **NOT** accurately drawn

A fish tank is in the shape of a cuboid.
The length of the fish tank is 0.8 m and the width is 0.3 m.
The volume of water in the fish tank is 108 litres.

$$1 \text{ m}^3 = 1000 \text{ litres.}$$

Work out the depth of the water in the fish tank.

..... m

(Total for Question 7 is 3 marks)

8 The scale of a map is 1 : 25 000
On the map, the distance between two railway stations is 22 cm.

Work out the real distance between the two railway stations.
Give your answer in kilometres.

..... km

(Total for Question 8 is 3 marks)

9 (a) Solve the inequalities $-6 \leq 3x < 9$

.....
(2)

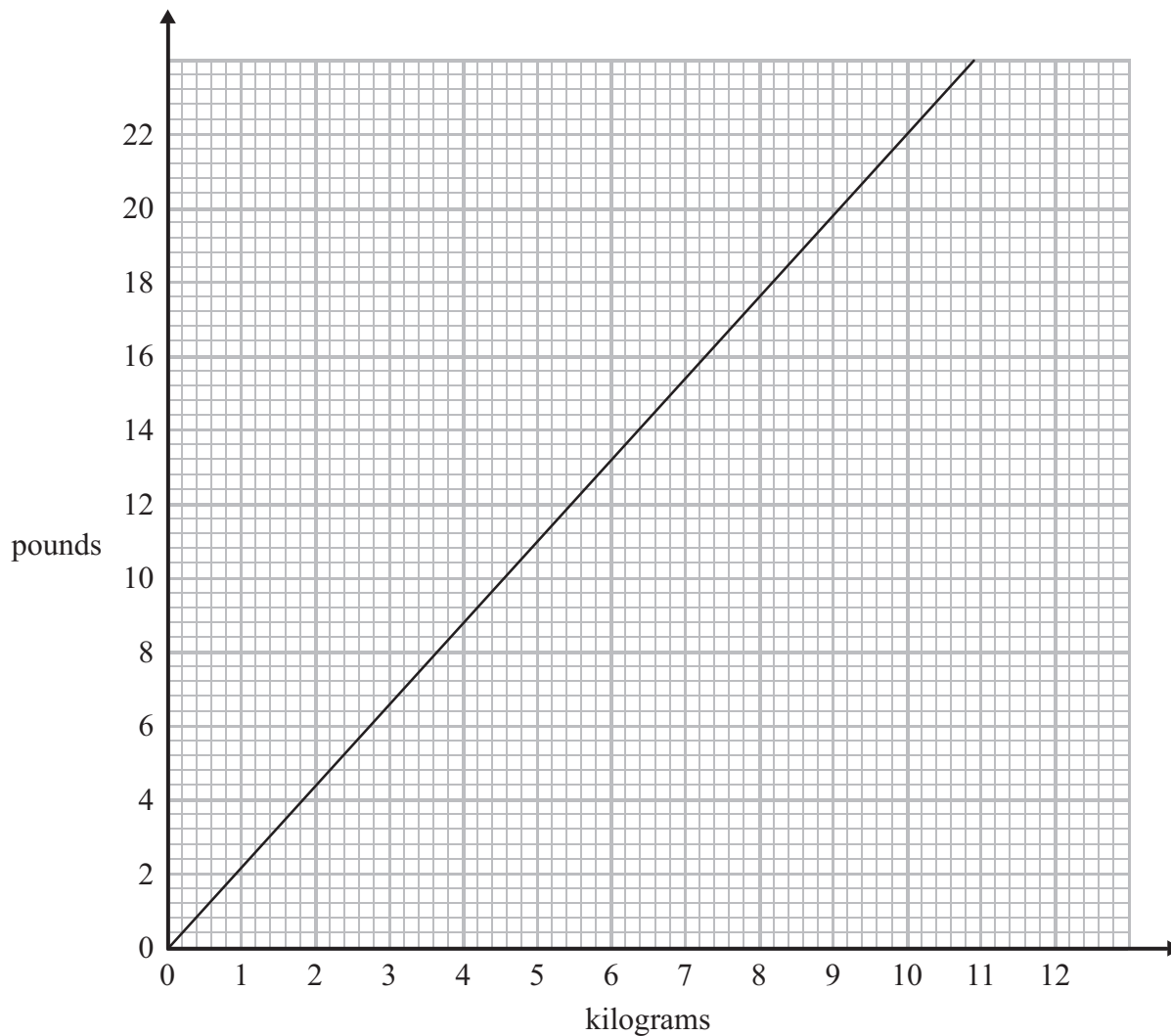
(b) n is an integer.

Write down all the values of n which satisfy $-6 \leq 3n < 9$

.....
(2)

(Total for Question 9 is 4 marks)

10 You can use this conversion graph to change between kilograms and pounds.



Daniel's weight is 9 stone 6 pounds.
1 stone = 14 pounds.

What is Daniel's weight in kilograms?

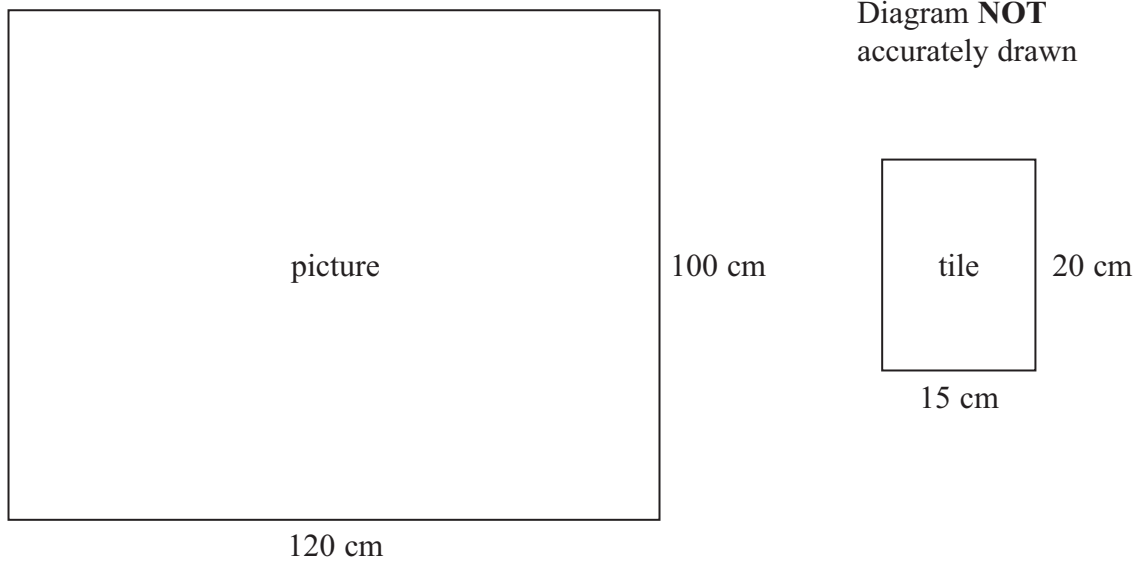
..... kilograms

(Total for Question 10 is 3 marks)

11 A picture is made from tiles.

The diagram shows the picture in the shape of a rectangle, 120 cm by 100 cm.

It also shows a tile in the shape of a rectangle, 15 cm by 20 cm.



(a) Work out the number of these tiles needed to make the picture.

.....
(3)

The total cost of the tiles is £52 plus VAT.

The rate of VAT is 20%.

(b) Work out 20% of £52

£

(2)

(Total for Question 11 is 5 marks)

12

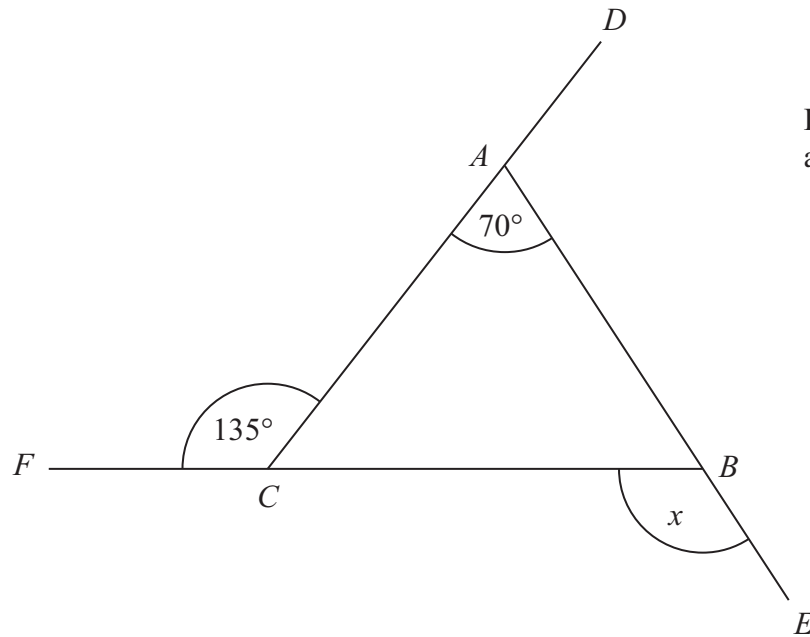


Diagram **NOT**
accurately drawn

DAC, *FCB* and *ABE* are straight lines.

Work out the size of the angle marked *x*.
You must give reasons for your answer.

(Total for Question 12 is 5 marks)

13 Tame Valley is a company that makes yoghurt.

A machine fills trays of 20 pots with yoghurt.

In one hour, the machine fills a total of 15 000 pots.

Work out how many seconds the machine takes to fill each tray of 20 pots.

..... seconds

(Total for Question 13 is 4 marks)

14 (a) Solve $3(x - 2) = x + 7$

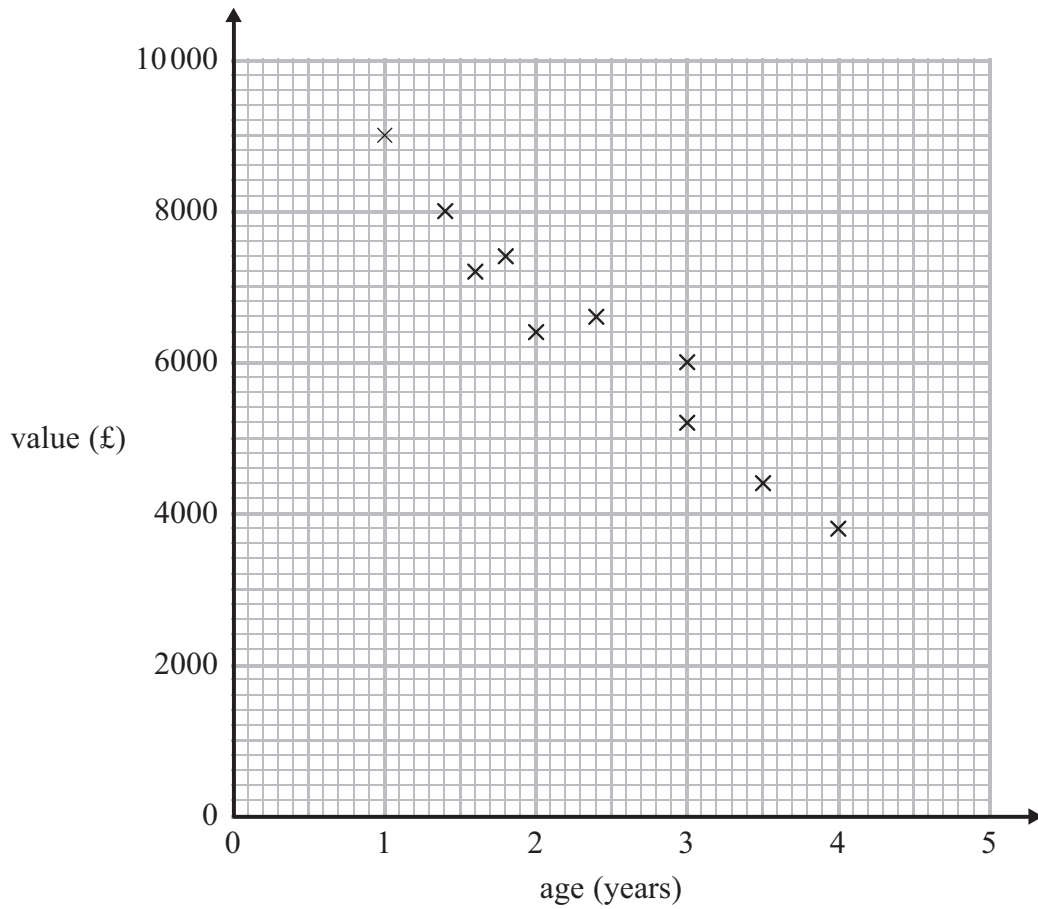
$x = \dots\dots\dots$
(2)

(b) Solve $\frac{2 - y}{5} = 1$

$y = \dots\dots\dots$
(2)

(Total for Question 14 is 4 marks)

15 The scatter graph shows some information about 10 cars, of the same type and make.
The graph shows the age (years) and the value (£) of each car.



The table shows the age and the value of two other cars of the same type and make.

age (years)	1	3.5
value (£)	8200	5000

(a) On the scatter graph, plot the information from the table.

(1)

(b) Describe the relationship between the age and the value of the cars.

(1)

A car of the same type and make is $2\frac{1}{2}$ years old.

(c) Estimate the value of the car.

£

(2)

(Total for Question 15 is 4 marks)

16 Colin, Dave and Emma share some money.

Colin gets $\frac{3}{10}$ of the money.

Emma and Dave share the rest of the money in the ratio 3 : 2

What is Dave's share of the money?

.....
(Total for Question 16 is 4 marks)

17 The diagram shows a ladder leaning against a vertical wall.

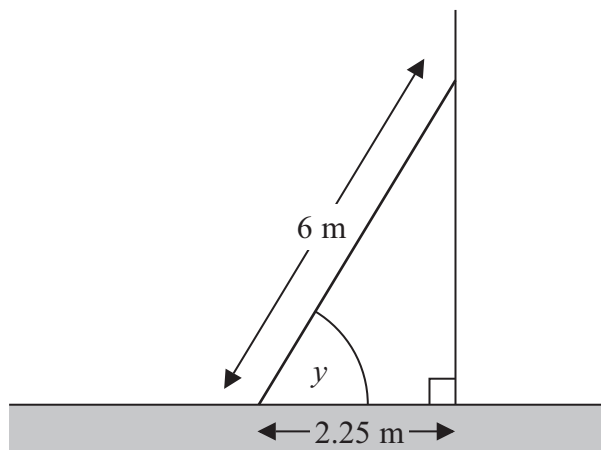


Diagram **NOT**
accurately drawn

The ladder stands on horizontal ground.

The length of the ladder is 6 m.

The bottom of the ladder is 2.25 m from the bottom of the wall.

A ladder is safe to use when the angle marked y is about 75° .

Is the ladder safe to use?

You must show all your working.

(Total for Question 17 is 3 marks)

18 An airline increases the prices of its flights by 8%.

(a) Before the increase, the price of a flight to Cairo was £475

Work out the price of a flight to Cairo after the increase.

£.....
(3)

(b) The increase in price of a flight to Mumbai was £48

Work out the price of a flight to Mumbai after the increase.

£.....
(3)

(Total for Question 18 is 6 marks)

19 $S = \{s, q, u, a, r, e\}$

$V = \{a, e, i, o, u\}$

List the members of the set

(i) $S \cap V$

.....

(ii) $S \cup V$

.....

(Total for Question 19 is 2 marks)

20 (a) Factorise $x^2 + 2x - 35$

.....

(b) Expand and simplify $(x - 6)(x + 2)$

.....

(Total for Question 20 is 4 marks)
