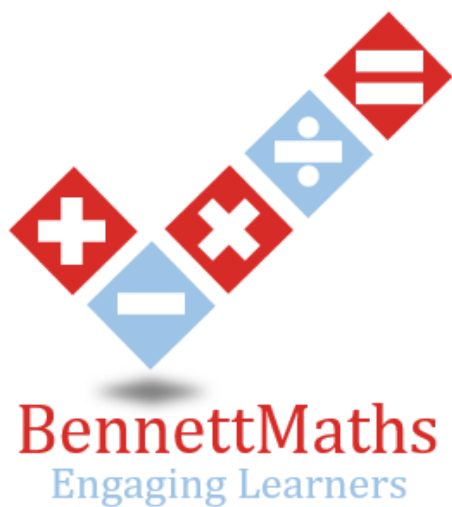


Candidate surname

Other names



Best Guess Paper – 3F Calculator

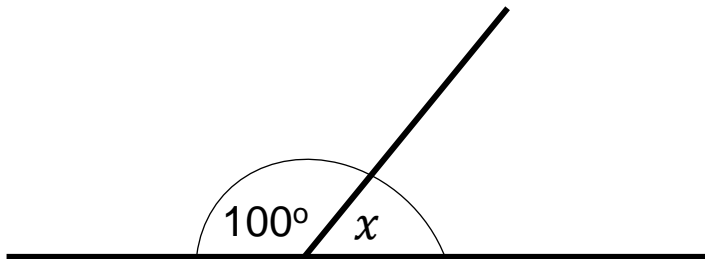
Within this booklet you will find my best guess at what might be on the next AQA gcse maths paper.

There may be other topics that appear on paper 3, so please ensure that you continue to revise all topics.

The paper consists of 28 questions totalling 80 marks.

1 Work out the size of x

[1 mark]



Answer _____

2 Convert 34% into a decimal

[1 mark]

Answer _____

3 Circle the probability of rolling an even number on a fair dice

[1 mark]

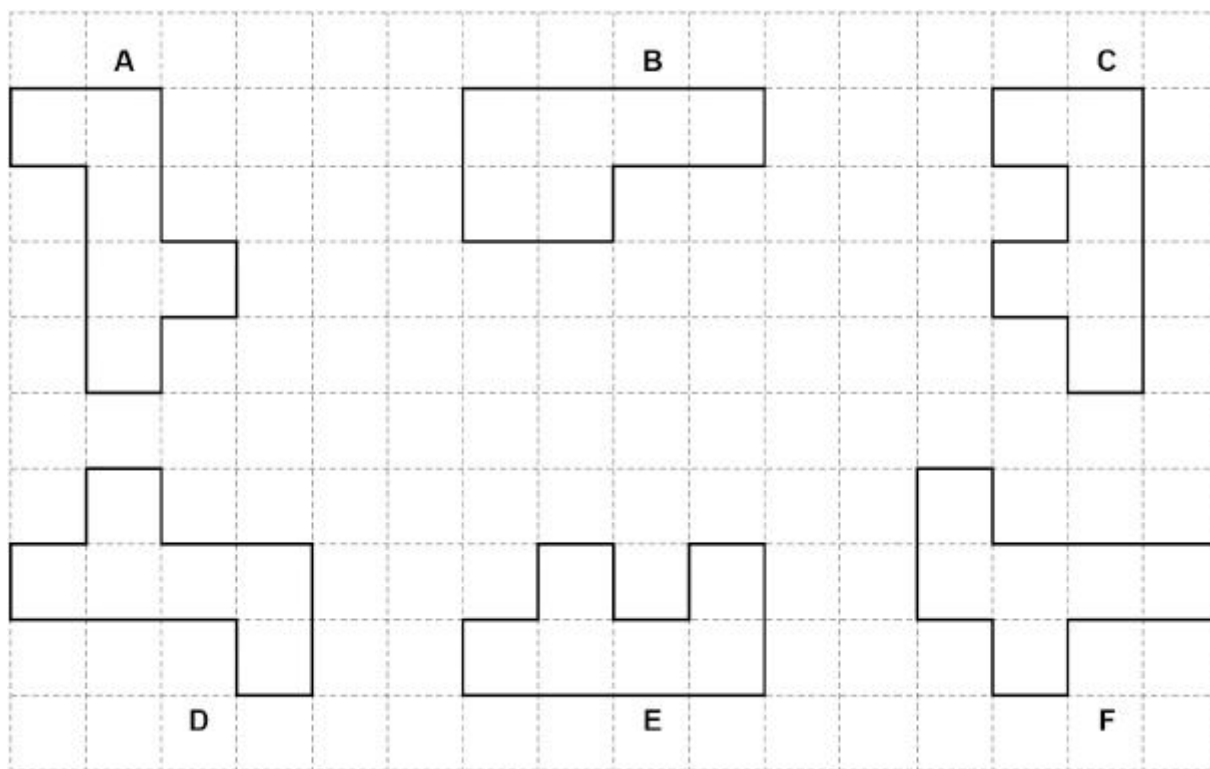
$$\frac{1}{2}$$

$$\frac{1}{3}$$

$$\frac{1}{4}$$

$$\frac{1}{6}$$

- 4 Here are some shapes.
Each shape has an area of six square centimetres.



- (a) Which has the bigger perimeter, shape **A** or shape **B**?

[2 marks]

You **must** show the lengths of both perimeters.

Answer _____

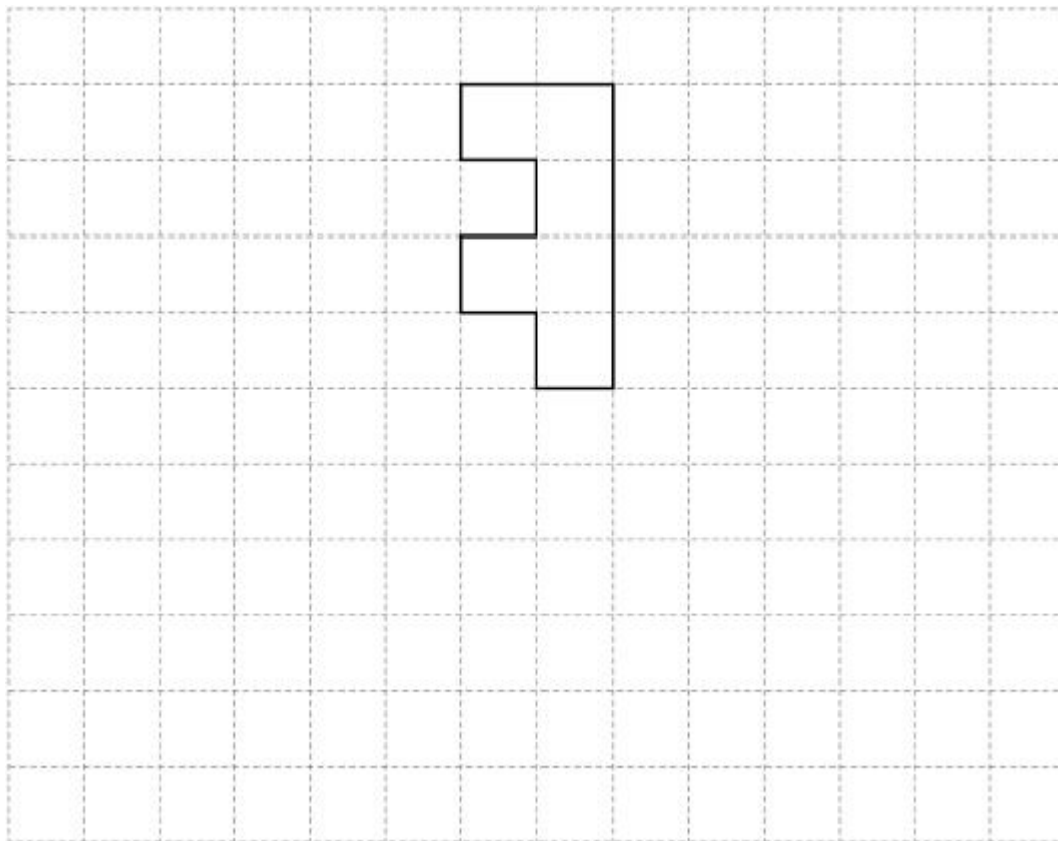
- (b) Which shape is congruent to shape A?

[1 mark]

Answer _____

(c) How many lines of symmetry does the shape below have?

[1 mark]



Answer _____

5 (a) List all the factors of 30

Answer _____ **[2 marks]**

(b) List the first five multiples of 7

Answer _____ **[2 marks]**

(c) From the list below, circle a value which is a prime number

[1 mark]

1 9 13 21

6 Two angles in an isosceles triangle measure 48° each

Work out the size of the missing angle

[2 marks]

Answer _____

7 Josh buys some food for £17.65

He uses exactly 2 notes and 4 coins

(a) Write down the notes and coins that he uses

[2 marks]

Notes _____

Coins _____

Layla also buys the same food for £17.65.

They pay with a £20 note.

(b) Work out the change that they receive

[2 marks]

Answer _____

8 Using a calculator, work out the value of

$$\sqrt[3]{\frac{4.3 \times \sin(45)}{9.3^2}}$$

(a) Write down all the numbers on your calculator display

[2 marks]

Answer _____

(b) Round your answer to part (a) to 3 significant figures

[1 mark]

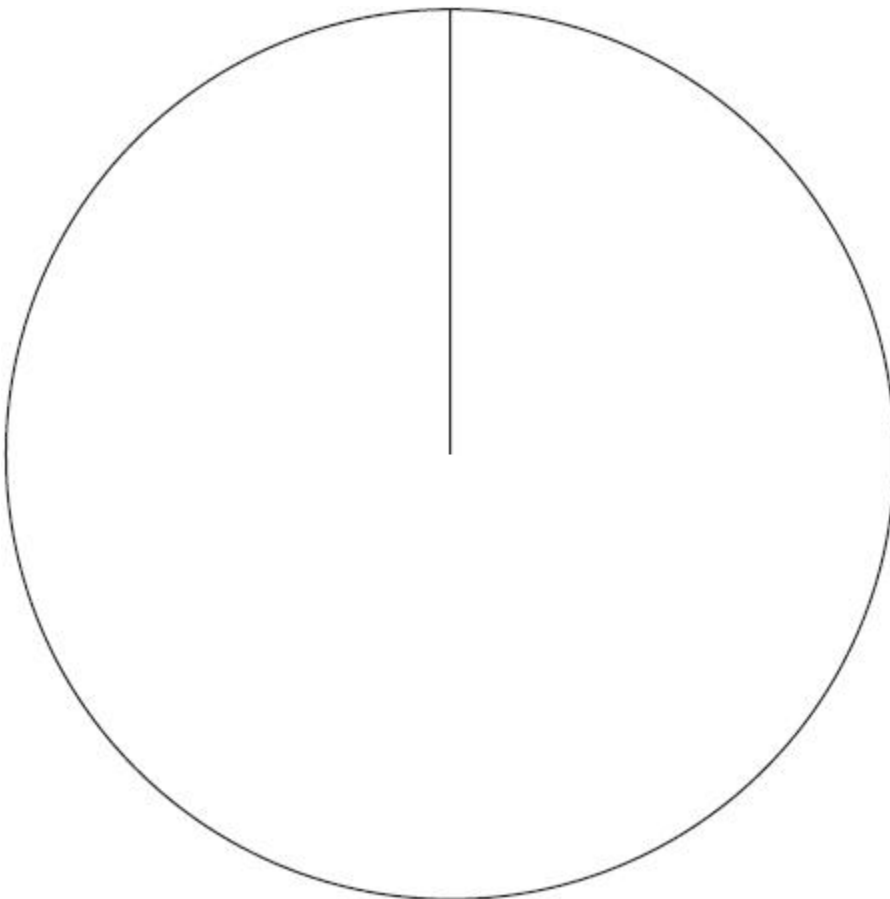
Answer _____

9 The frequency table below shows the favourite sport of 45 students

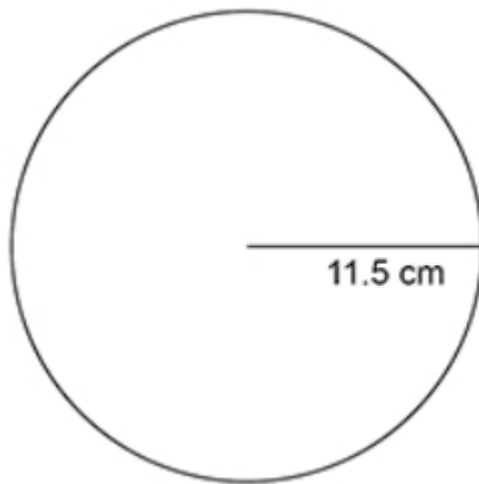
Sport	Frequency
athletics	13
cycling	17
swimming	8
gymnastics	7

Draw an accurate pie chart to represent this information

[3 marks]



10 The circle below has a radius of 11.5cm



Maya and Holly work out the area of the circle. Their workings are below.

Maya

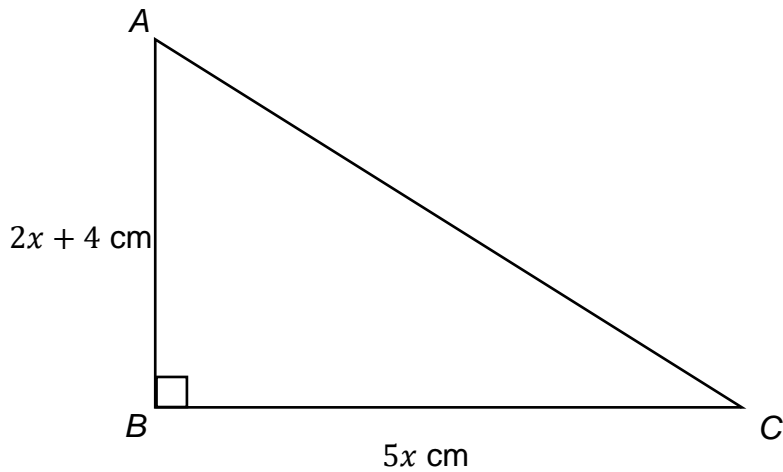
$$2 \times \pi \times 11.5 = 23\pi$$

Holly

$$\pi \times 11.5^2 = 132.25\pi$$

Which person worked out the area correctly, give a reason for your answer **[1 mark]**

- 11 ABC is a right-angled triangle.
 $AB = 2x + 4$ cm
 $BC = 5x$ cm



- (a) Work out the area of the triangle.
Giving your answer in the form $ax^2 + bx$ cm². Where a and b are integers

[3 marks]

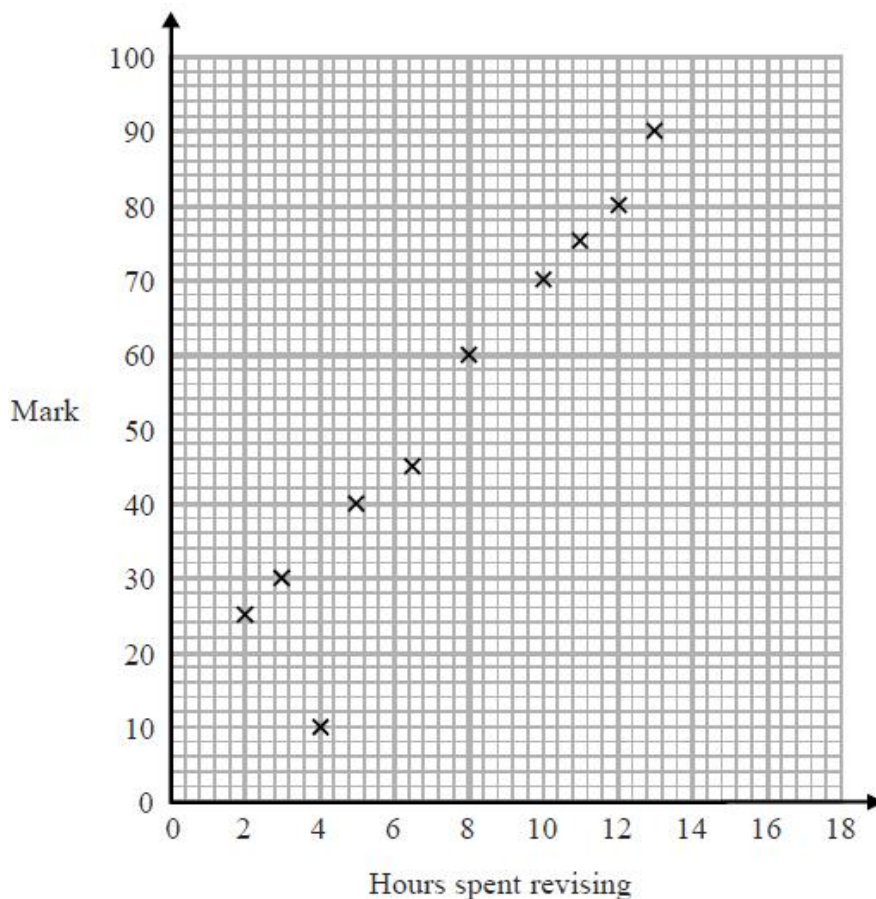
Answer _____

- (b) The area of another shape is $4x^2 + 6x$.
If the value of x is 3.
Work out the value of the area of this shape.

[2 marks]

Answer _____

12 The scatter shows the maths scores attained by some students in Year 11.



- (a) Jacob scored 80 marks after revising for 4 hours.
Plot this information on the scatter graph

[1 mark]

- (b) Maggie revised for 9 hours. Work out an estimate for the mark she would achieve

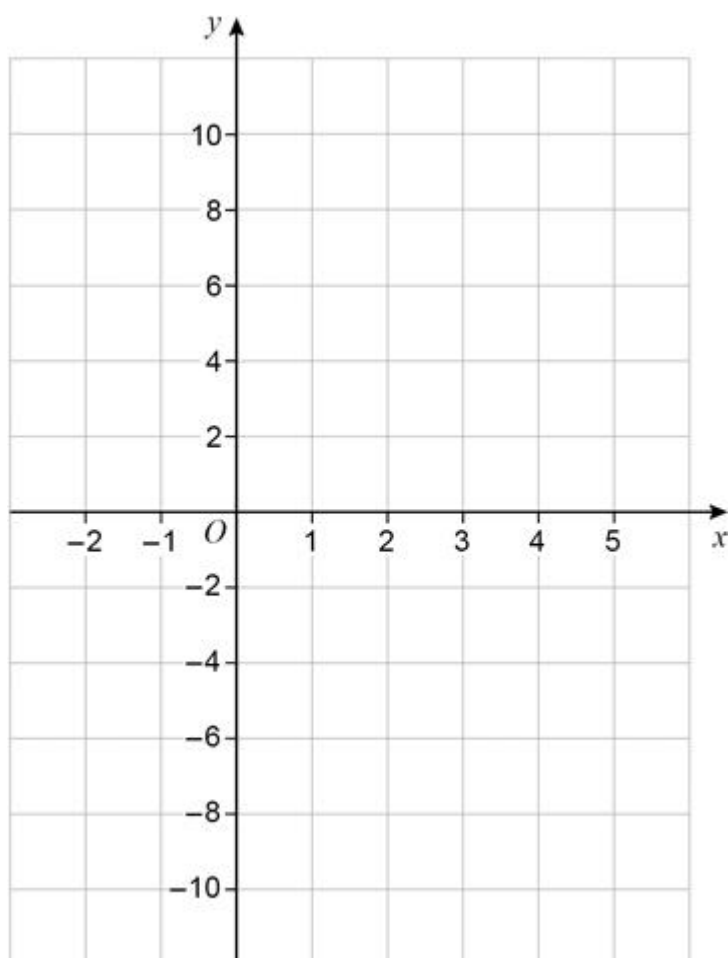
[2 marks]

Answer _____

- (c) Daisy says that using the graph to estimate the mark achieved for somebody spending 18 hours revising would not be appropriate. Explain why? **[1 mark]**

13 On the grid, draw the graph of $y = 2x - 6$ for values of x from -2 to 5

[3 marks]



- 14 The frequency table below shows the pocket money received by 35 pupils.

[3 marks]

Pocket Money	Frequency
$0 \leq x < 5$	7
$5 \leq x < 8$	8
$8 \leq x < 10$	16
$10 \leq x < 20$	4

Work out an estimate for the mean amount of pocket money received by each pupil.

Answer _____

15 Margot takes part in a 5 km fun run.

During the first 2.4km she runs at an average speed of 6 km/h.

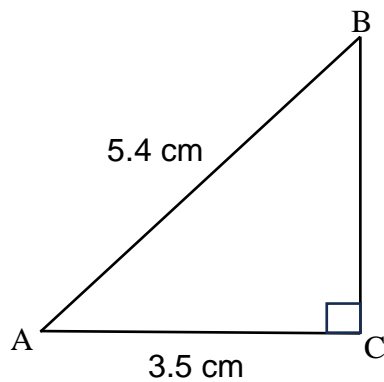
She is aiming to complete the race in under 54 minutes.

Work out the average speed that she needs to maintain to finish in under 54 minutes.

[4 marks]

Answer _____

- 16** The right-angled triangle ABC has been drawn below.
AB = 5.4 cm
AC = 3.5 cm

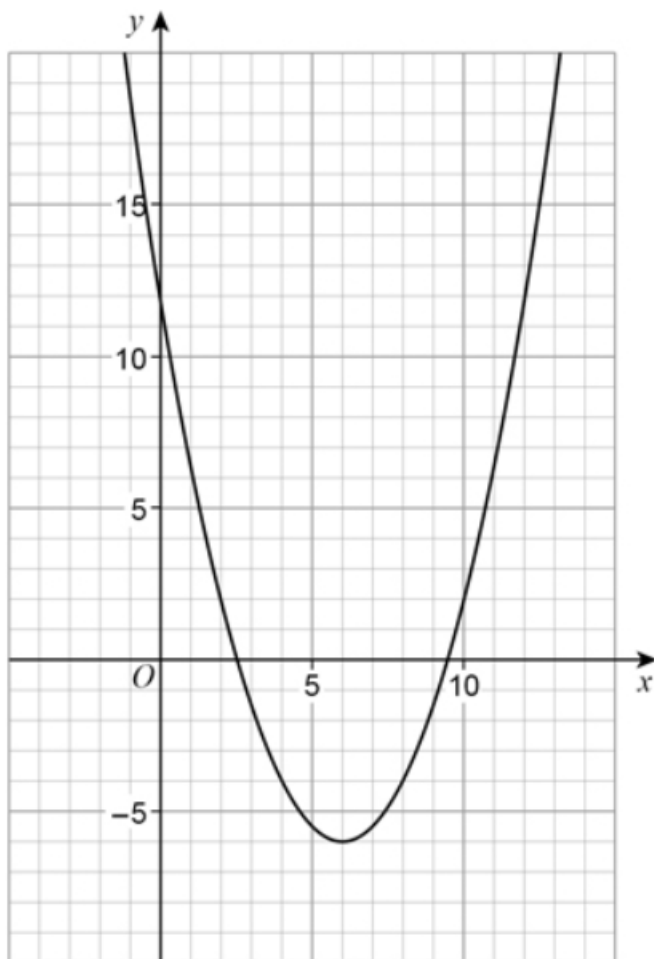


Work out the length of BC.
Give your answer correct to 2 decimal places.

[3 marks]

Answer _____

17 Here is the graph of $y = \frac{1}{2}x^2 - 6x + 12$



Use the graph to estimate the solutions of $y = \frac{1}{2}x^2 - 6x + 12$

[2 marks]

Answer _____

18 Make x the subject of $y^2 = x^2 - 2cd$

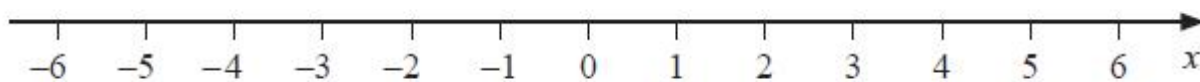
[2 marks]

Answer _____

19 Express on the number line

$$-4 < 2x + 1 \leq 5$$

[3 marks]



20 Expand and simplify

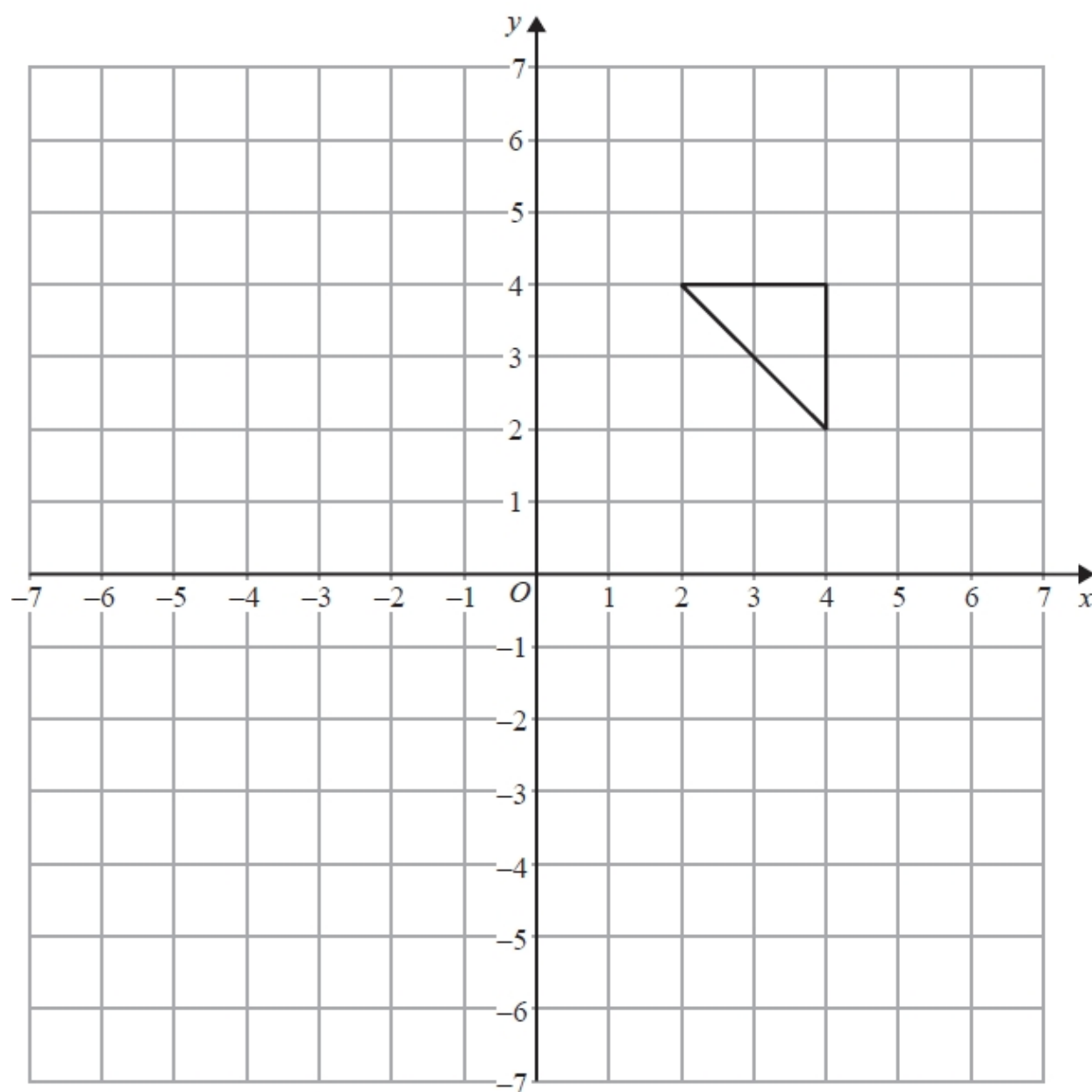
$$3(2x + 4) - 2(x - 1)$$

[2 marks]

Answer _____

21 Reflect the triangle given, in the line $y = -x$

[3 marks]



22 The first 4 terms of an arithmetic sequence are

12, 17, 22, 27...

Write down an expression, in terms of n , for the n th term of the sequence

[2 marks]

Answer _____

23 A Fibonacci sequence begins

–1, 3, 2, 5 ...

[2 marks]

Show that the 6th term is greater than 10

24 Leo is going to invest £2500 for 3 years. He will choose one of the following banks.

Bank of Bennett

5.25% compound interest
for the 1st year.

4% compound interest for
all future years.

Bank of Buckley

4.6% compound interest for
the first 3 years

Which bank will return the greatest amount of interest

[3 marks]

Answer _____

(b) Bank of Buckley have a special offer available of 4.7% compound interest for the first 3 years. Will this affect your answer to part (a)?

Give a reason for your answer.

[1 mark]

25 Here is some information about 120 people who visit a shop.

$\frac{3}{4}$ of the people buy neither a coat nor a dress.

19 people buy a coat.

14 people buy a dress.

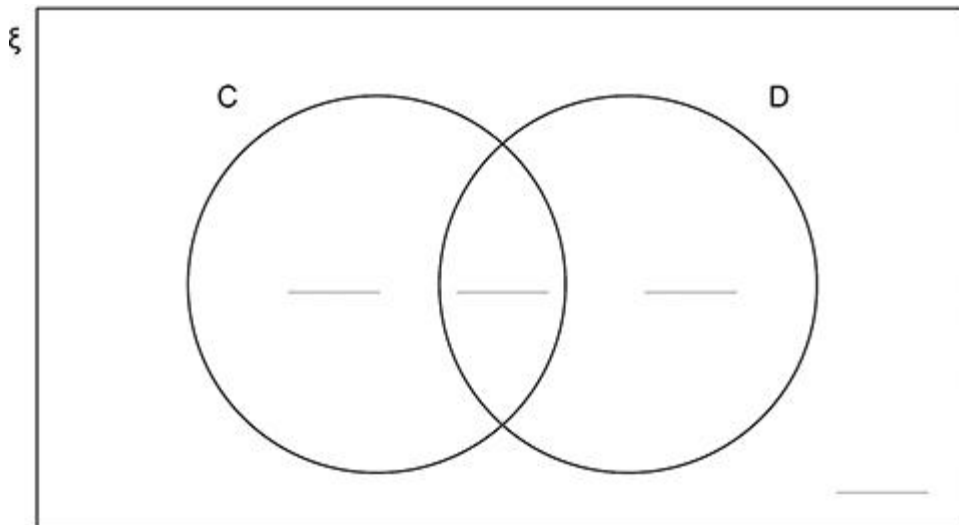
Complete this Venn diagram to represent the information.

ξ = 120 people who visit the shop

C = people who buy a coat

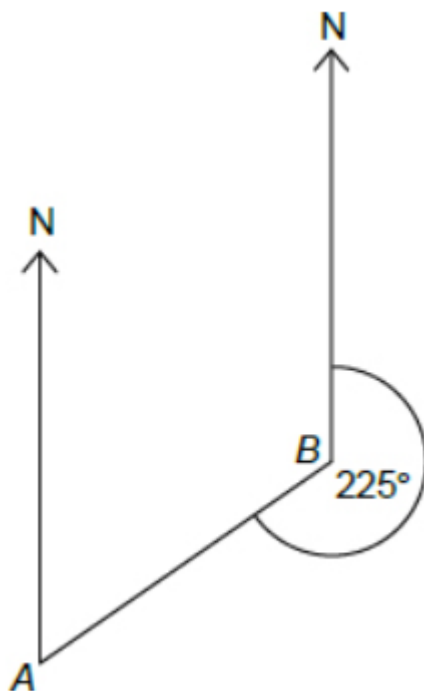
D = people who buy a dress

[3 marks]



26 The bearing of A from B is 225°

[3 marks]

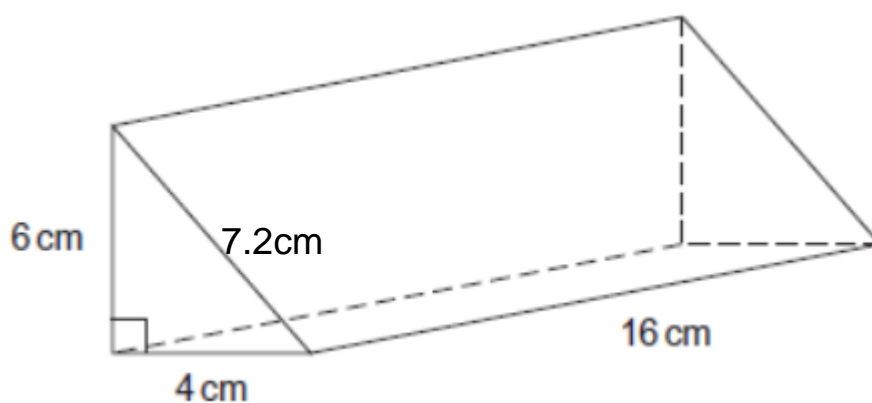


Work out the bearing of B from A

Answer _____^o

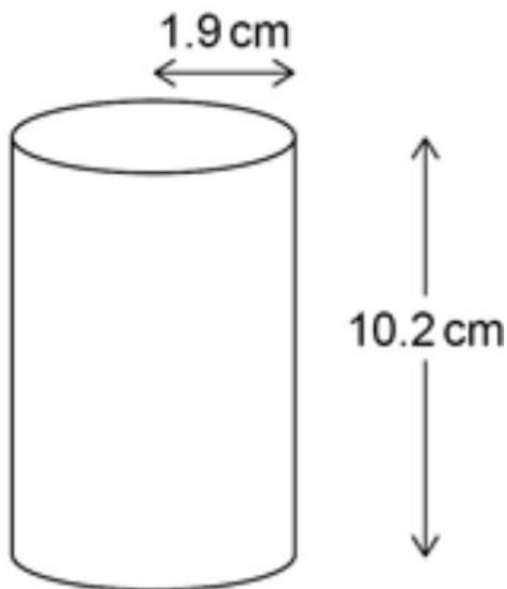
27 Work out the surface area of the triangular prism below

[4 marks]



Answer _____

28 The diagram shows a prism.



Work out the volume of the prism

[3 marks]

Answer _____