JustMaths

BUMPER

"BETWEEN PAPERS 2 AND 3" PRACTICE PAPER (Q28 TO Q54)

FOUNDATION TIER (SUMMER 2017)

QUESTIONS

NOT A "BEST" GUESS PAPER.

NEITHER IS IT A "PREDICTION" ... ONLY THE EXAMINERS KNOW WHAT IS GOING TO COME UP! FACT!
YOU ALSO NEED TO REMEMBER THAT JUST BECAUSE A TOPIC CAME UP ON PAPER 1 OR PAPER 2 IT MAY STILL COME UP ON PAPER 3

WE KNOW HOW IMPORTANT IT IS TO PRACTISE, PRACTISE, PRACTISE .... SO WE'VE COLLATED A LOAD OF QUESTIONS THAT WEREN'T EXAMINED IN THE PEARSON/EDEXCEL NEW 9-1 GCSE MATHS PAPER 1 AND PAPER 2 BUT WE CANNOT GUARANTEE HOW A TOPIC WILL BE EXAMINED IN THE FINAL PAPER
ENJOY!

MEL & SEAGER

NB: SOME OF THESE QUESTIONS MAY HAVE ALSO BEEN INCLUDED IN THE PAPERS USED BETWEEN PAPERS 1 AND 2 ... THE PRACTISE IS GOOD FOR YOU!

	Marks	Actual	
Q28. Simultaneous eqns/inequalities	**6**		
Q29. Proportion – recipes	**3**		
Q30. Proportion - recipes	**5**		
Q31. Exchange rates	**3**		
Q32. Exchange rates	**5**		
Q33. Sketching graphs	**4**		
Q34. Sketching graphs	**6**		
Q35. Enlargements	**3**		
Q36. Gradient	**2**		
Q27. Angle facts	**4**		
Q38. Interior angles	**3**		
Q39. Angle facts	**4**		
Q40. Angle facts	**4**		
Q41 Angle facts	**3**		
Q42. Distance/time graphs	**5**		
Q43. Distance/time graphs	**8**		
Q44. Forming equations	**4**		
Q45. Forming and solving equations	**5**		
Q46. Forming and solving equations	**3**		
Q47. Area	**2**		
Q48. Volume	**4**		
Q49. Perimeter	**3**		
Q50. Forming equations	**4**		
Q51. Forming expressions	**3**		
Q52. Trigonometry	**3**		
Q53. Pythagoras and trigonometry	**4**		
Q54. Pythagoras and trigonometry	**4**		
	107		

Q28. (a) Solve the simultaneous equations

$$3x + 5y = 4$$

$$2x - y = 7$$

(3)

(b) Find the integer value of x that satisfies both the inequalities

$$x + 5 > 8 \text{ and } 2x - 3$$

(3)

(Total for question = 6 marks)

Q29. Here are the ingredients needed to make 16 chocolate biscuits.

Chocolate biscuits

Makes **16** chocolate biscuits

100 g of butter
50 g of caster sugar
120 g of flour
15 g of cocoa

Sabrina has 250 g of butter
300 g of caster sugar
600 g of flour
and 60 g of cocoa

Work out the greatest number of chocolate biscuits Sabrina can make.
You must show your working.

(Total for Question is 3 marks)

Q30. Here is a list of ingredients for making cherry scones.

Makes 8 cherry scones

200 grams flour
60 grams margarine
40 grams sugar
60 grams cherries
160 ml milk

Chen wants to make 20 cherry scones.

(a) Work out how much milk he will need.

.....m/ **(2)**

Sophie has 80 grams of sugar and 300 grams of flour.

She has plenty of the other ingredients.

(b) What is the greatest number of cherry scones she can make?

You must show all your working.

(3)

(Total for Question is 5 marks)

Q31. Ben goes on holiday to Hong Kong.

In Hong Kong, Ben sees a camera costing HK$3179.55

In London, an identical camera costs £285

The exchange rate is £1 = HK$12.30

Ben buys the camera in Hong Kong.
How much cheaper is the camera in Hong Kong than in London?

.....

(Total for Question is 3 marks)

Q32. Stacey went to the theatre in Paris.

Her theatre ticket cost €96
The exchange rate was £1 = €1.20

(a) Work out the cost of her theatre ticket in pounds (£).

£ . . . . . **(2)**

Stacey bought a handbag in Paris.

The handbag cost €64.80 In Manchester, the same type of handbag costs £52.50

The exchange rate was £1 = €1.20

(b) Compare the cost of the handbag in Paris with the cost of the handbag in Manchester.

(3)

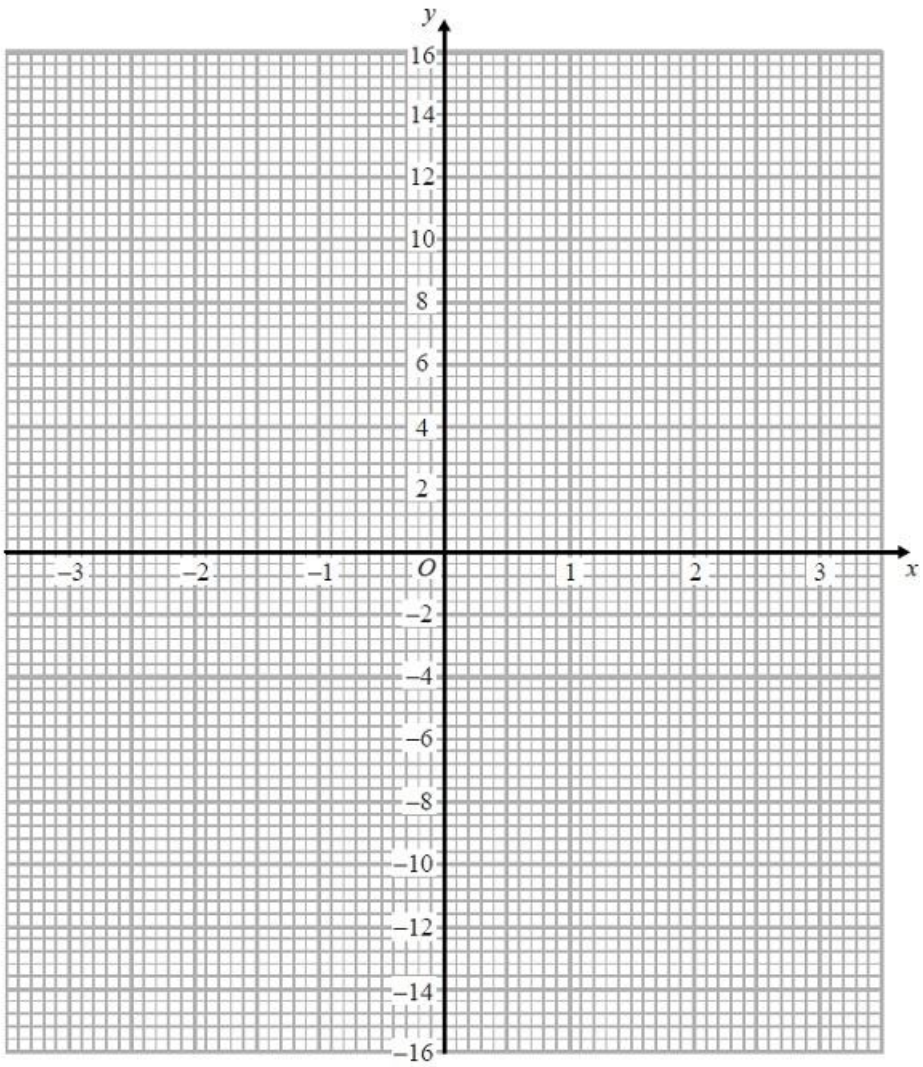
(Total for Question is 5 marks)

Q33. (a) Complete the table of values for $y = x^3 - 4x$

x	−3	−2	−1	0	1	2	3
y			3	0			15

(2)

(b) On the grid, draw the graph of $y = x^3 - 4x$ from $x = -3$ to $x = 3$



(2)

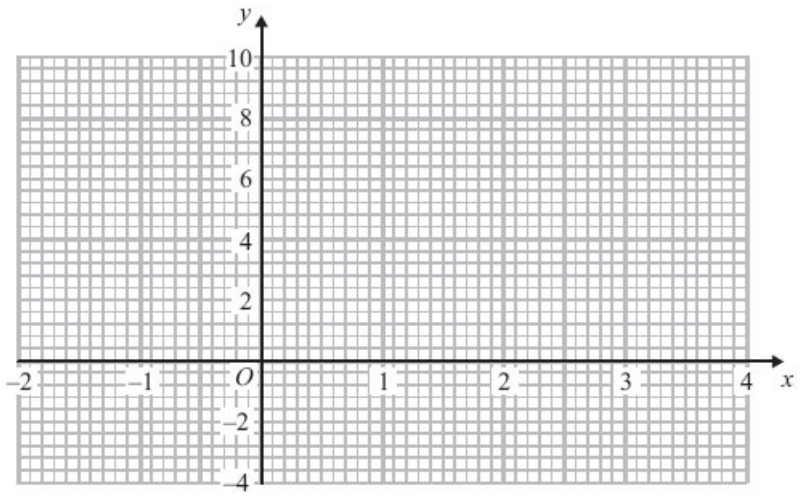
(Total for Question is 4 marks)

Q34. (a) Complete the table of values for $y = x^2 - 2x$

x	–2	–1	0	1	2	3	4
y		3	0			3	

(2)

(b) On the grid, draw the graph of $y = x^2 - 2x$ for values of x from –2 to 4



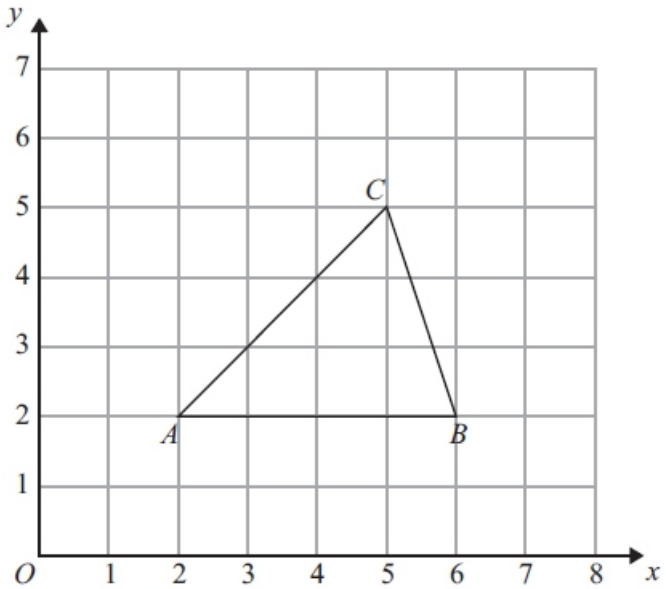
(2)

(c) Solve $x^2 - 2x - 2 = 1$

(2)

(Total for Question is 6 marks)

Q35.



Triangle *ABC* is drawn on a centimetre grid.
A is the point (2, 2).
B is the point (6, 2).
C is the point (5, 5).

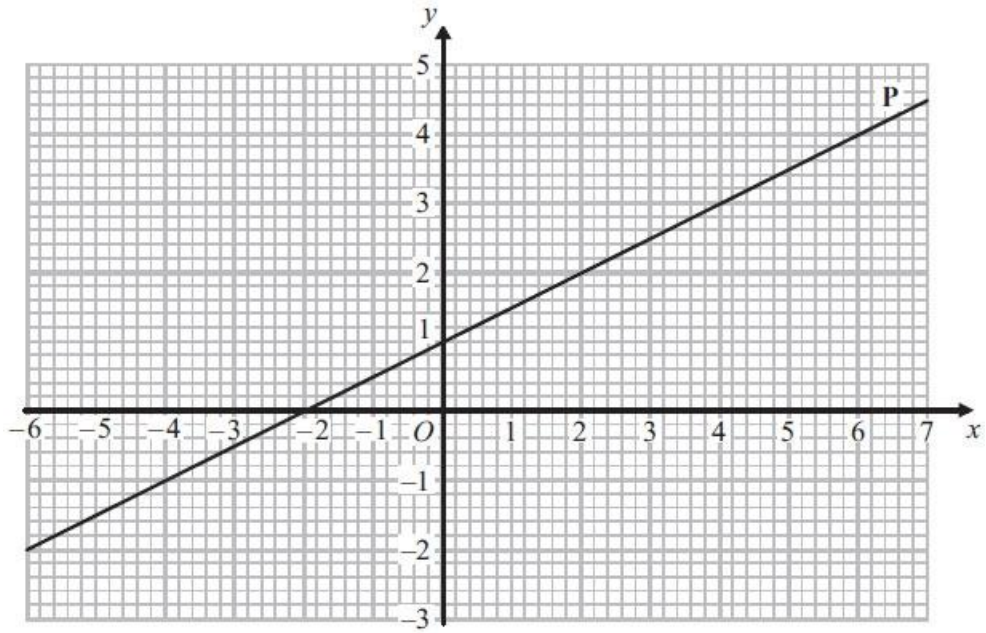
Triangle *PQR* is an enlargement of triangle *ABC* with scale factor ½ and centre (0, 0).

Work out the area of triangle *PQR*.

. . . . . cm²

(Total for Question is 3 marks)

Q36. The straight line **P** has been drawn on a grid.



Find the gradient of the line **P**.

(Total for Question is 2 marks)

Q37.

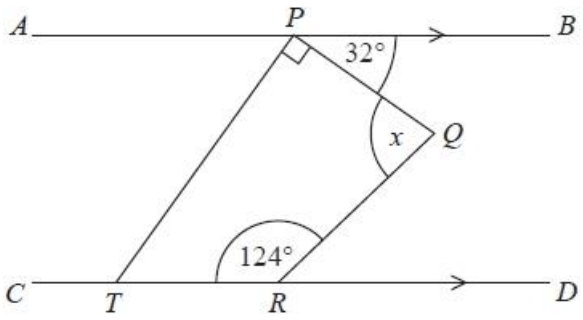


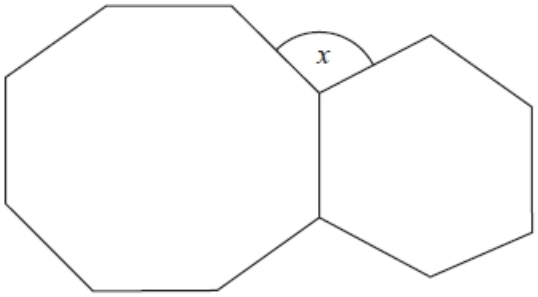
Diagram **NOT** accurately drawn

APB is parallel to *CTRD*.
PQRT is a quadrilateral.

Work out the size of the angle marked *x*.
You must show your working.

(Total for question = 4 marks)

Q38.



The diagram shows a regular octagon and a regular hexagon.

Find the size of the angle marked *x*
You must show all your working.

x =..... °

(Total for question = 3 marks)

Q39.

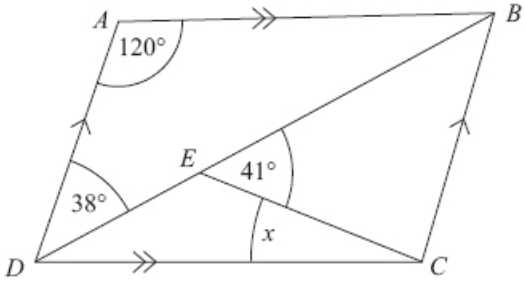


Diagram **NOT** accurately drawn

ABCD is a parallelogram.

Angle *ADB* = 38°.
Angle *BEC* = 41°.
Angle *DAB* = 120°.

Calculate the size of angle *x.*
You must give reasons for your answer.

(Total for Question is 4 marks)

Q40.

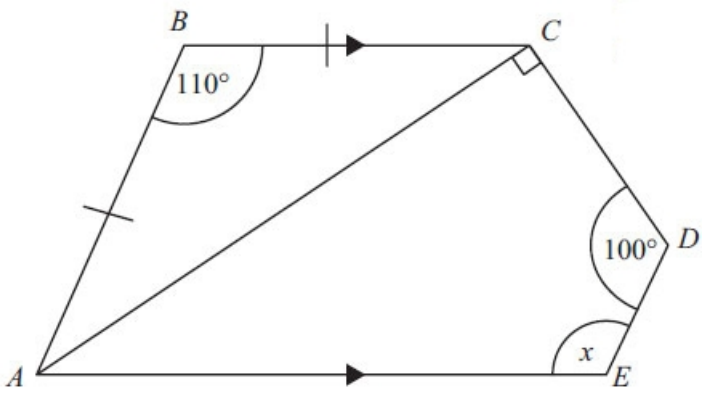


Diagram **NOT** accurately drawn

ABC is an isosceles triangle.
AB = *BC*.
Angle *ABC* = 110°.

ACDE is a quadrilateral.
Angle *CDE* = 100°.
Angle *ACD* is a right-angle.

AE is parallel to *BC*.

Work out the size of the angle marked *x*.
Give reasons for each stage of your working.

(Total for Question is 4 marks)

Q41.

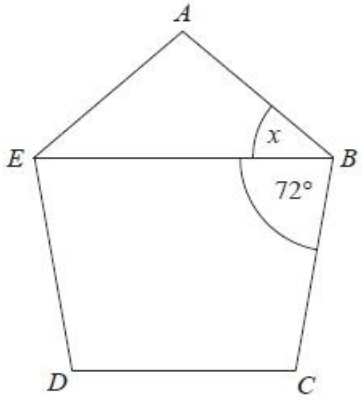


Diagram **NOT** accurately drawn

ABCDE is a regular polygon.
EB is a straight line.
Angle *EBC* = 72°.

Work out the size of the angle marked *x*.

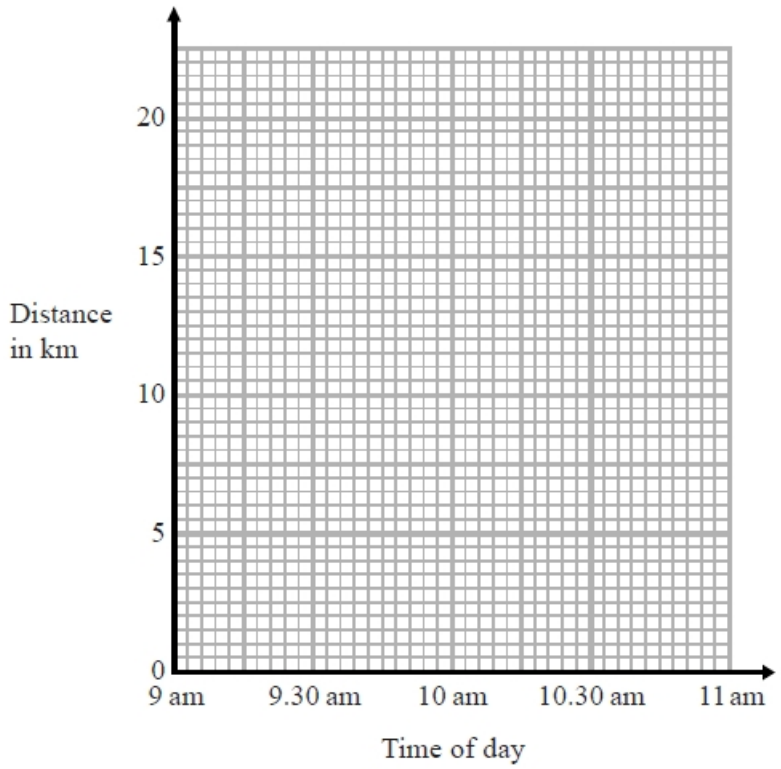
..... °

(Total for question = 3 marks)

Q42. At 9 am, Bradley began a journey on his bicycle.

From 9 am to 9.36 am, he cycled at an average speed of 15 km/h.
From 9.36 am to 10.45 am, he cycled a further 8 km.

(a) Draw a travel graph to show Bradley's journey.



(3)

From 10.45 am to 11 am, Bradley cycled at an average speed of 18 km/h.

(b) Work out the distance Bradley cycled from 10.45 am to 11 am.

..... km **(2)**

(Total for question is 5 marks)

Q43. Sarah goes to the gym on her way to work.
The table shows what she wants to do before arriving at work.

Activity	**Time (mins)**
Drive from home to gym	10
Exercise at gym	45
Shower and change	20
Drive from gym to work	25

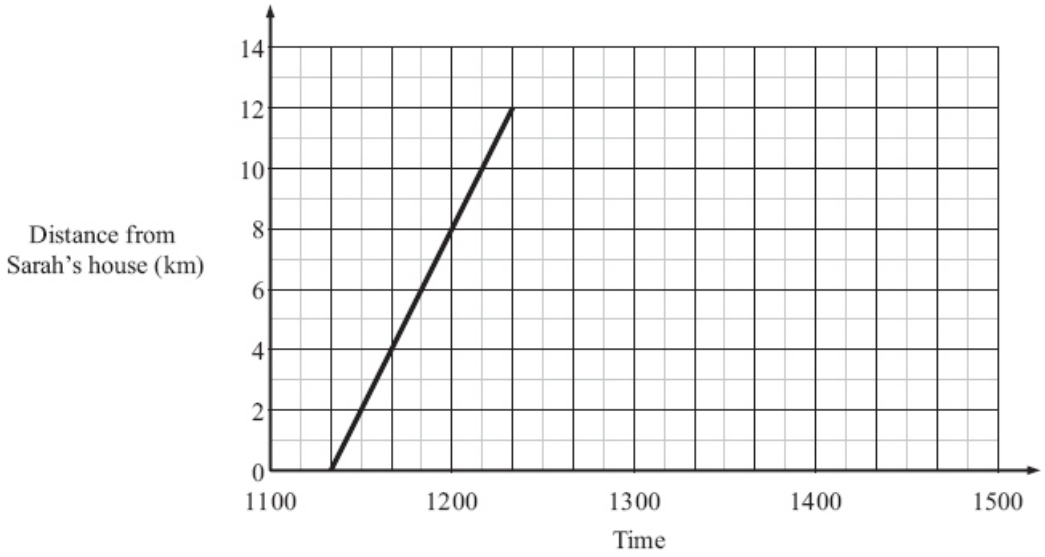
She has to arrive at work at 08 50

(a) What is the latest time she can leave home?

. . . . . **(3)**

Each Saturday, Sarah cycles from her house to the gym.

The travel graph shows Sarah's journey to the gym.



(b) What time does she leave home?

. . . . . **(1)**

(c) How far is the gym from Sarah's house?

. . . . . km **(1)**

Sarah stays at the gym for 1½ hours.

She then cycles back to her house at 18 km/h.

(d) Complete the travel graph.

(3)

(Total for Question is 8 marks)

Q44. The diagram shows a trapezium.

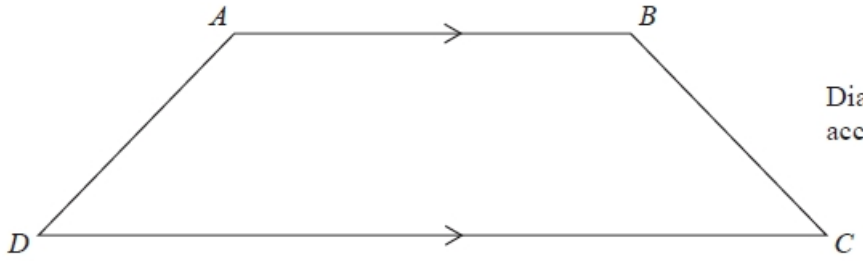


Diagram **NOT** accurately drawn

AD = *x* cm.
BC is the same length as *AD*.
AB is twice the length of *AD*.
DC is 4 cm longer than *AB*.

The perimeter of the trapezium is 38 cm.

Work out the length of *AD*.

..... cm

(Total for Question is 4 marks)

Q45. Redlands School sent *x* students to a revision day.

St Samuel's School sent twice as many students as Redlands School.

Francis Long School sent 7 fewer students than Redlands School.

Each student paid £15 for the revision day.
The students paid a total of £1155

Work out how many students were sent by each school to the revision day.
You must show all your working.

(Total for question = 5 marks)

Q46. Dan has some marbles.

Ellie has twice as many marbles as Dan.

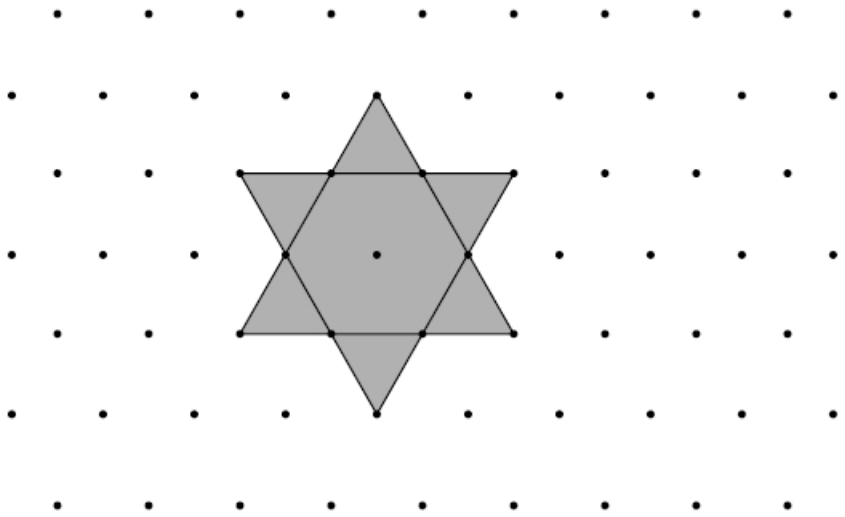
Frank has 15 marbles.

Dan, Ellie and Frank have a total of 63 marbles.

How many marbles does Dan have?

(Total for Question is 3 marks)

Q47. Here is a star shape.



The star shape is made from a regular hexagon and six congruent equilateral triangles.

The area of the star shape is 96 cm^2.

Work out the area of the regular hexagon.

..... cm^2

(Total for question = 2 marks)

Q48. Ali has some packets.

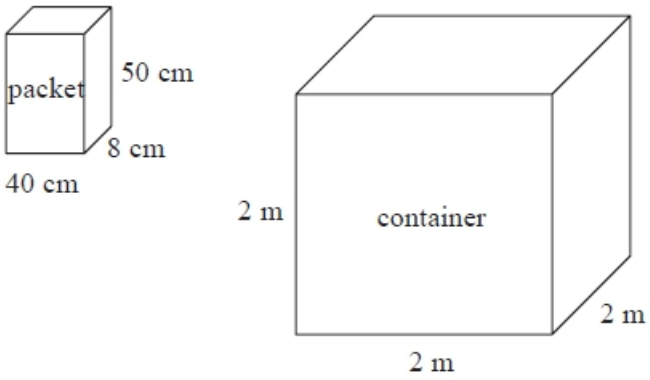


Diagram **NOT** accurately drawn

Each packet has dimensions 40 cm by 8 cm by 50 cm.

Ali fills a container with these packets.
The container is a cube of side 2 m.

Ali fills the container completely with these packets.

Work out the number of packets.

(Total for Question is 4 marks)

Q49. Here is an equilateral triangle.

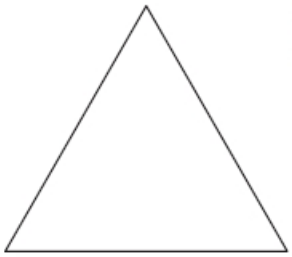
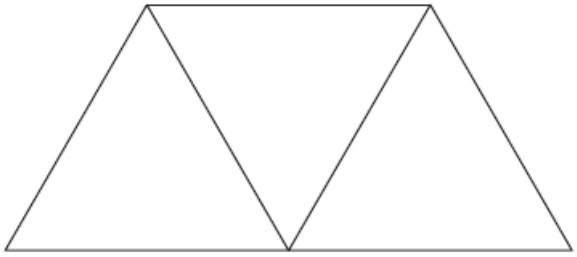


Diagram **NOT** accurately drawn

The equilateral triangle has a perimeter of 24 cm.

Three of these equilateral triangles are used to make this trapezium.



Work out the perimeter of the trapezium.

..... cm

(Total for question = 3 marks)

Q50. The diagram shows a garden in the shape of a rectangle.

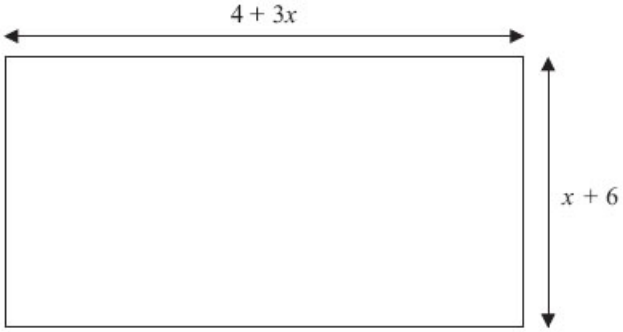


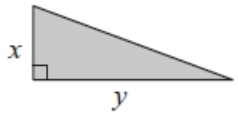
Diagram **NOT** accurately drawn

All measurements are in metres.
The perimeter of the garden is 32 metres.

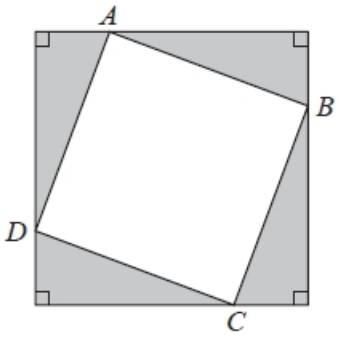
Work out the value of x

(Total for Question is 4 marks)

Q51. Here is a right–angled triangle.



Four of these triangles are joined to enclose the square *ABCD* as shown below.



Show that the area of the square *ABCD* is $x^2 + y^2$

(Total for question = 3 marks)

Q52. The diagram shows a ladder leaning against a vertical wall.

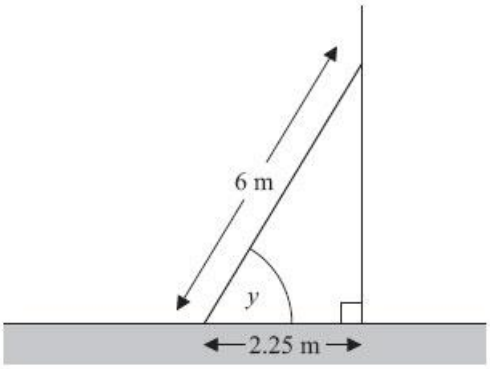


Diagram **NOT** accurately drawn

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 is 3 marks)

Q53.

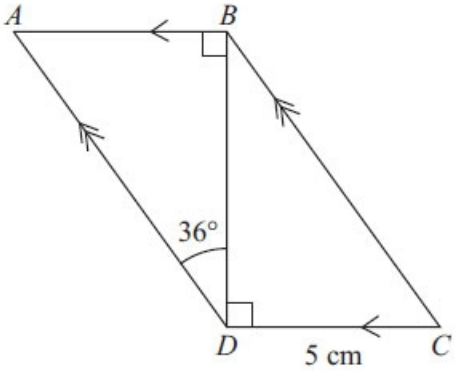


Diagram **NOT** accurately drawn

ABCD is a parallelogram.

DC = 5 cm
Angle *ADB* = 36°

Calculate the length of *AD*.
Give your answer correct to 3 significant figures.

(Total for Question is 4 marks)

Q54.

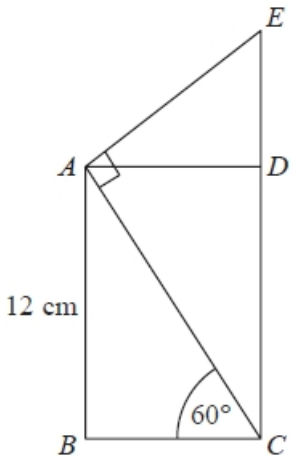


Diagram **NOT** accurately drawn

ABCD is a rectangle.
CDE is a straight line.

AB = 12 cm
Angle *ACB* = 60°
Angle *EAC* = 90°

Calculate the length of *CE*.
You must show all your working.

..... cm

(Total for question = 4 marks)