Corbettmaths

100 Days to Go
GCSE Foundation
Revision Questions

100 Days to Go

Answers

See 14 Days to Go

1. From the list of numbers

4 7 9 10 11 15 31

(a) Write down a factor of 21

.....

(1)

(b) Write down a factor of 62

.....

(1)

(c) Write down a factor of 45

.....

(1)

---

2. Don says

“the difference between two consecutive cube numbers is always odd.”

Is Don correct?
You must show your workings.

(2)

3. (a) Write 60 as a product of its prime factors.

.....

(2)

(b) Find the Lowest Common Multiple (LCM) of 60 and 75.

.....

(2)

---

4. Penny gets £8 pocket money.
She is given an increase of £3.

(a) Write down £3 as a fraction of £8

.....

(1)

(b) Write your answer as a percentage

.....

(1)

5. Jo has a recipe for Bolognese Sauce,

Bolognese Sauce

Minced Beef	500 g
Chopped Tomatoes	750 g
Mushrooms	40 g
Chicken Stock	150 ml

She only has 400g of minced beef.

How much of the other ingredients should she use?

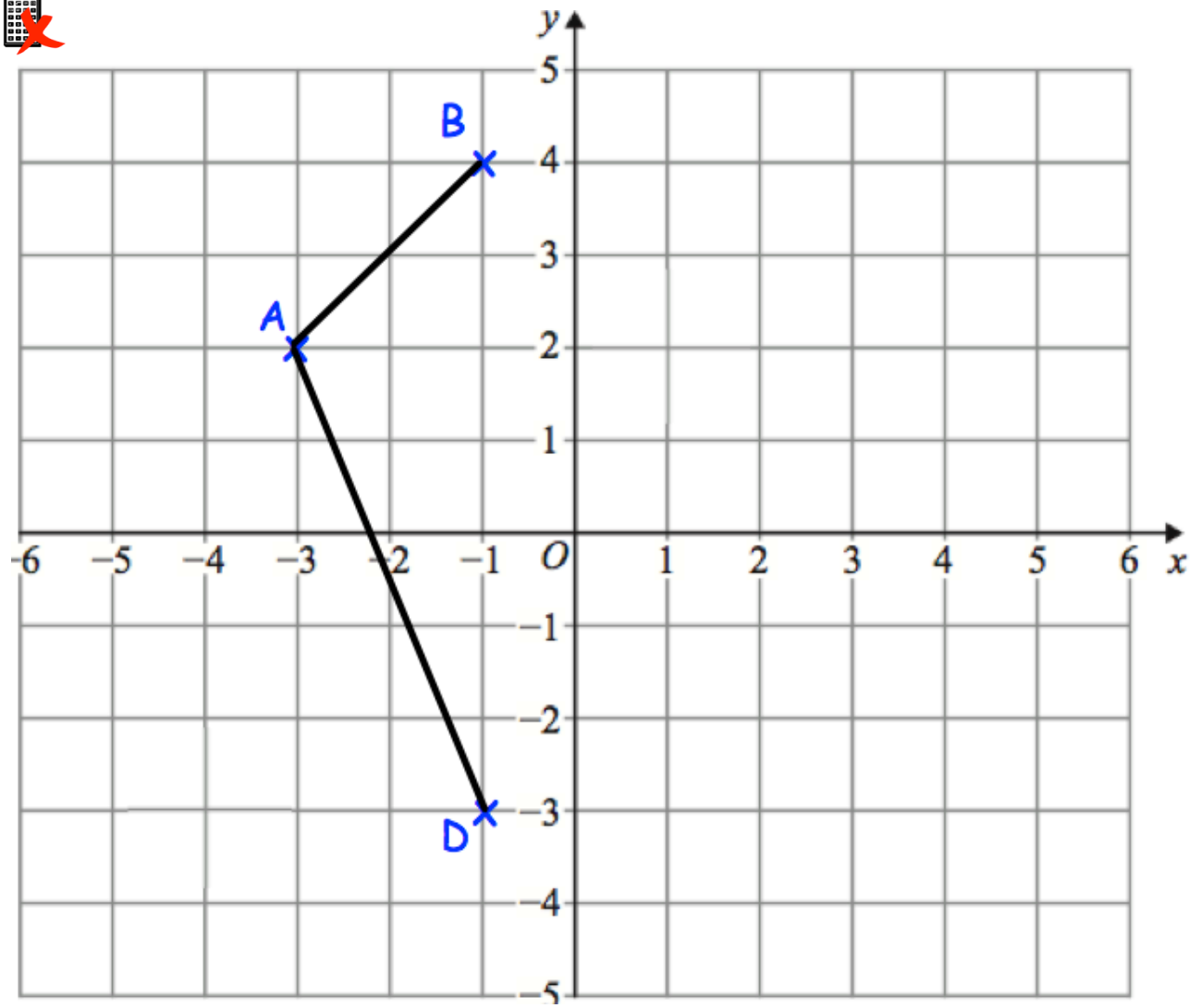
Chopped Tomatoes: .....g

Mushrooms: .....g

Chicken Stock: .....ml

(3)

6. The points A (-3, 2), B (-1, 4) and D (-1, -3).



ABCD is a kite.
Complete the kite and write down the coordinates of C.

(..... , ...)

(2)

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7. An airplane has economy and first class seating.
There are *s* seats in each row in economy.
There are *t* seats in each row in first class.

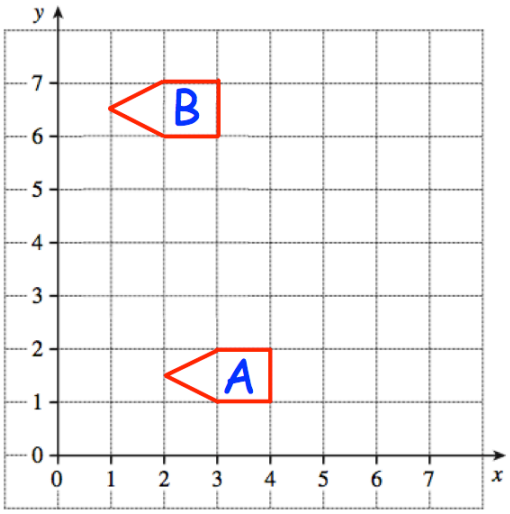
There are 9 rows in first class and 24 rows in economy.

Write down an expression, in terms of *s* and *t*, for the number of seats on the airplane.

.....

(2)

8.



Write down the translation vector that would take A to B.

$$\begin{pmatrix} \ldots\ldots\ldots \\ \ldots\ldots\ldots \end{pmatrix}$$

(1)

---

9. Hannah is recording the number of letters in each word in an article.

These are the first ten lengths.

3 4 5 6 2 4 3 7 3 6

(a) Work out the median.

.....

(2)

(b) Calculate the mean.

.....

(2)

The 11th word has 4 letters.

(c) Tick the box which describes what affect this will have on the mean.

The mean will decrease	The mean will remain the same	The mean will increase
☐	☐	☐

(1)

(d) Tick the box which describes what affect this will have on the median.

The median will decrease	The median will remain the same	The median will increase
☐	☐	☐

(1)

---

10. (a) Write 5725 to the nearest 100.

.....

(1)

(b) Write 83.07718 correct to two decimal places.

.....

(1)

(c) Write 6.35 correct to 1 decimal place.

.....

(1)

(d) Write 129.34952 correct to 1 decimal place.

.....

(1)

11. Work out

(a) $(2 + 5)^2$

.....

(1)

(b) $5 + 3 \times 6$

.....

(1)

---

12. Work out, as a simplified fraction.

$$\frac{3}{4} + \frac{2}{9}$$

.....

(2)

---

13. Work out

$$1\frac{1}{3} \times 2\frac{2}{5}$$

Give your answer as a mixed number.

.....

(3)

14. At Frome International train station, 35% of trains were late in a week.
In that week there were 440 trains.

Calculate how many trains were on time.

.....

(3)

---

15. At a rugby match, the ratio of children to adults is 2 : 3
There are 80 children in the crowd.
Each adult ticket costs £8
Each child ticket costs a quarter of the adult ticket.

Work out the total money made from ticket sales.

£.....

(4)

16. $v = u + at$

(a) Work out v when u = 23, a = 4 and t = 3

.....

(2)

(b) Work out u when v = 30, a = 2 and t = 8

.....

(2)

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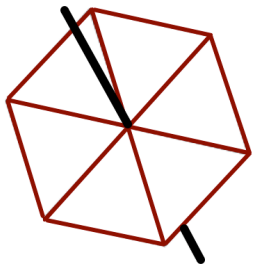
17. Tony makes a fair six-sided spinner.
The spinner has the numbers 7, 8 and 9 on it.

The probability the spinner will land on 7 is greater than the probability that the spinner will land on 8.

The probability that the spinner will land on 9 is ⅓

Write the numbers on the spinner.



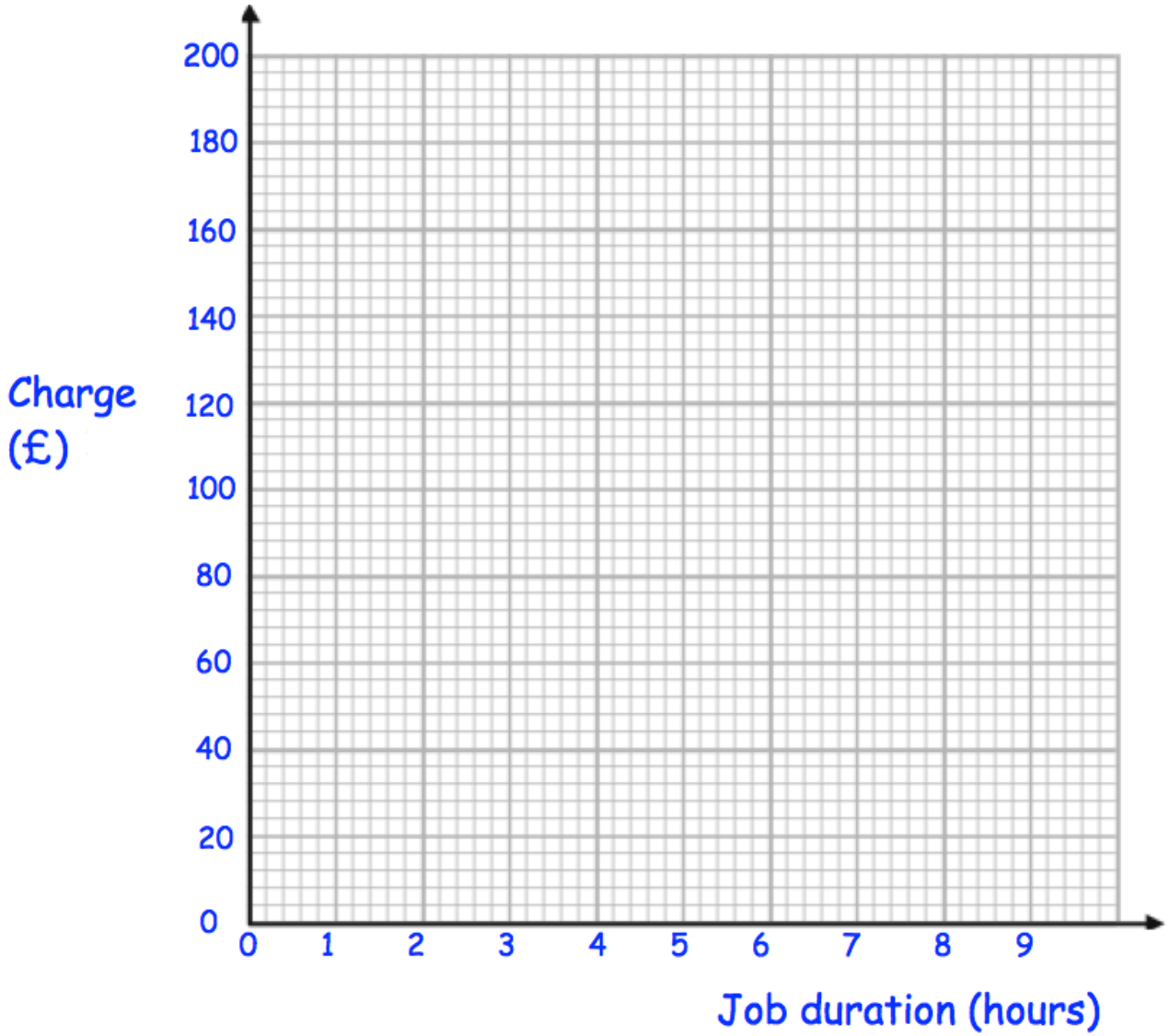
(2)

18. The table shows the charge (£) by plumbers for jobs of different duration (hours).

Job duration (hours)	1	2	3	3	5	6	6
Charge (£)	60	80	104	116	128	140	160

(a) Plot the data on the scatter graph below.

(2)



(b) Describe the correlation.

.....

.....

(1)

(c) Draw a line of best fit on the scatter graph.

(1)

(d) Use your line of best fit to estimate the charge for a 4 hour job.

£.....

(1)

(e) Explain why it may **not** be appropriate to use your line of best fit to estimate the charge for a job lasting 12 hours.

.....

.....

(1)

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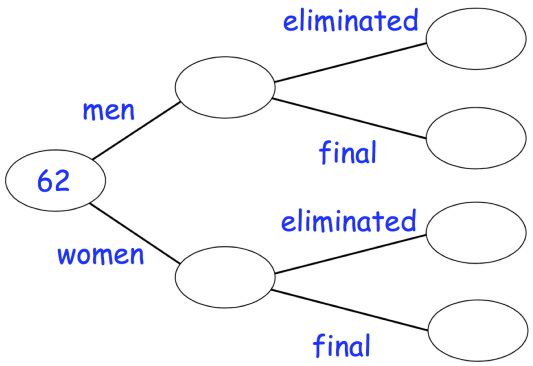
19. 62 people took part in a talent show
43 of the people were women.
10 people made it through to the final and the rest were eliminated.
3 men made it through to the final



a) Complete the frequency tree

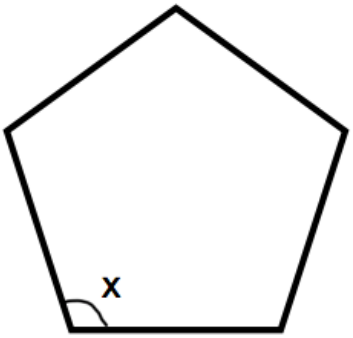
(2)

b) What fraction of the men made it through to the final?

.....

(2)

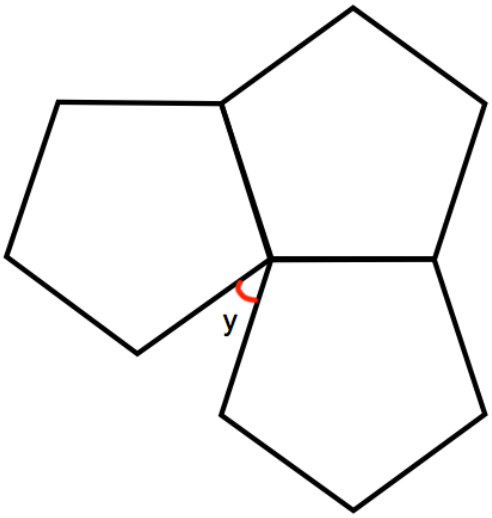
20. Shown below is a regular pentagon.



(a) Find the size of each interior angle.

x = ...^{0}

(2)



Three identical regular pentagons are joined as shown above.

(b) Work out the size of angle y.

y = ...^{0}

(2)

21. A car travels 240 kilometres in 3 hours 45 minutes

Calculate the average speed, in km/h, of the car.

.....km/h

(3)

---

22. The time for ten students to complete a race is below.

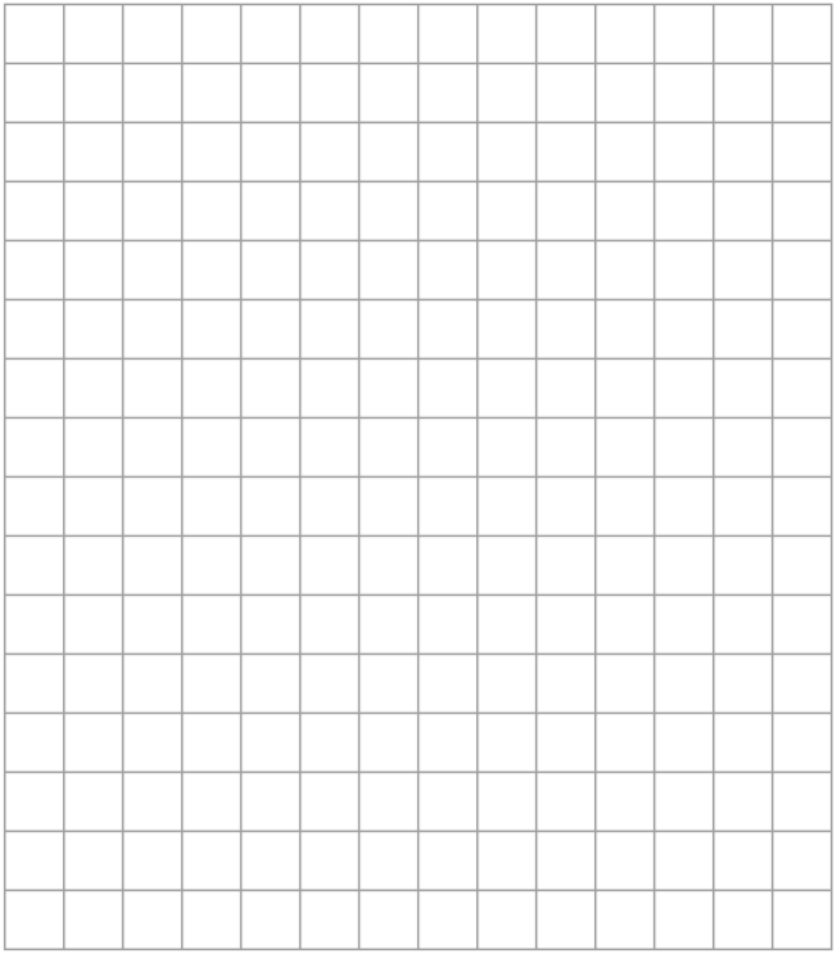
Time (t seconds)	Frequency
$20 < t \leq 40$	3
$40 < t \leq 60$	5
$60 < t \leq 80$	2

Work out an estimate for the mean time taken.

.....seconds

(4)

23. On the grid, draw $y = 4x - 5$ for values of x from -2 to 2.



(4)

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24. A fish tank sprung a leak and loses 20% of its water.
There is now 240 litres of water in the fish tank.

How much water was in the fish tank before the leak?

.....l

(3)

25. Peter's weight decreases from 80kg to 64kg.

Calculate the percentage decrease in Peter's weight.

.....%

(2)

---

26. Work out

4^{-2}

.....

(1)

---

27. Expand and simplify (w – 6)(w + 7)

.....

(2)

---

28. Solve 4y + 1 = 29 – 2y

y = ...

(2)

29. Work out the *n*th term for this sequence

12 22 32 42 52 ... ...

.....

(2)

---

30. Factorise fully

$9m^2 - 12mp$

.....

(2)

---

31. Factorise $x^2 + 4x - 12$

.....

(2)

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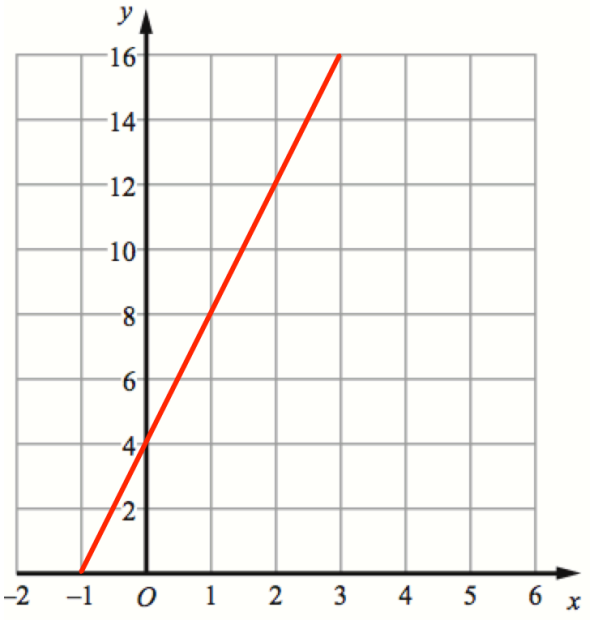
32. Solve the inequality $4x + 6 \geq 8$

.....

(2)

33. A straight line L is shown on the grid.



Work out the equation of line L

.....

(3)

---

34. Sebastian leaves £3000 in the bank for two years.
It earns compound interest of 2% per year.

Calculate the total amount Sebastian has in the bank at the end of the two years.

£.....

(2)

35. Write the following numbers in standard form.

(a) 5600

.....

(1)

(b) 41200000

.....

(1)

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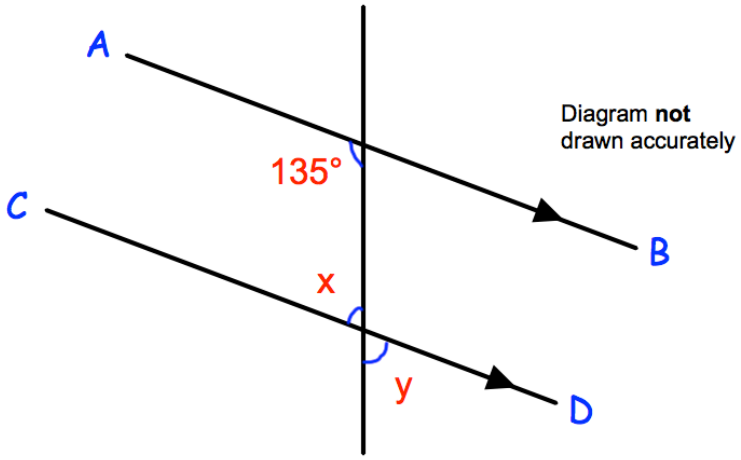
36. In the diagram AB is parallel to CD.



(a) Work out the size of the angle marked x.

.....°

Give a reason for your answer.

.....

(2)

(b) Write down the value of y.

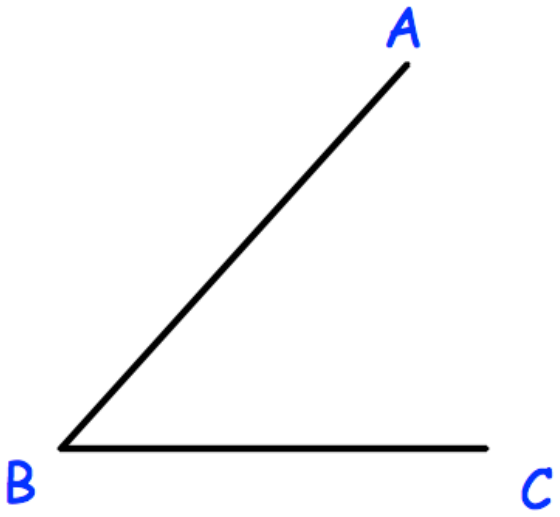
.....°

Give a reason for your answer.

.....

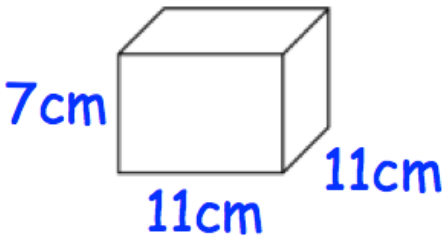
(2)

37. Using ruler and compasses, construct the bisector of angle ABC.



(2)

38.



Work out the surface area of this cuboid.
State the units of your answer.

.....

(3)

39. What is the volume of a piece of metal that has a mass of 300g and density of 6g/cm³?

.....cm³

(2)

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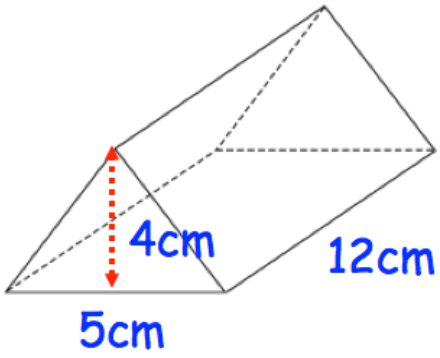
40. Shown below is a triangular prism.



Find the volume of the triangular prism.

.....cm³

(3)

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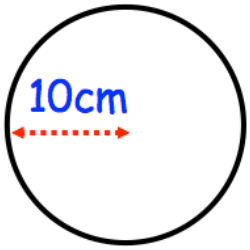
41. Shown below is a circle with radius 10cm.

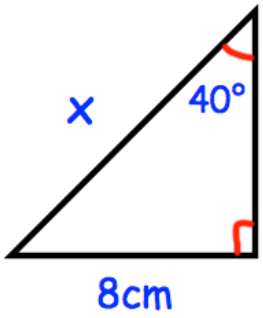


Work out the circumference of the circle.
Give your answer in terms of π.

.....cm

(2)

42. The diagram shows a right-angled triangle.



Calculate the length of x.

.....cm

(3)

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43. Given

$$a = \begin{pmatrix} 6 \\ -4 \end{pmatrix} \quad b = \begin{pmatrix} -2 \\ 1 \end{pmatrix}$$

Work out $2\mathbf{a} + \mathbf{b}$

.....

(3)

---

44. Nigel measures the time, t seconds, to complete a race as 14.8 seconds correct to the nearest tenth of a second.

Write down the error interval for t.

.....

(2)

45. Calculate the value of

$$\sqrt[3]{(25.4 - 5.9)^2}$$

(a) Write down your full calculator display.

.....

(1)

(b) Give your answer to three significant figures.

.....

(1)

---

46. A circle has an area of 64 cm²

Work out the radius of the circle.

.....cm

(2)

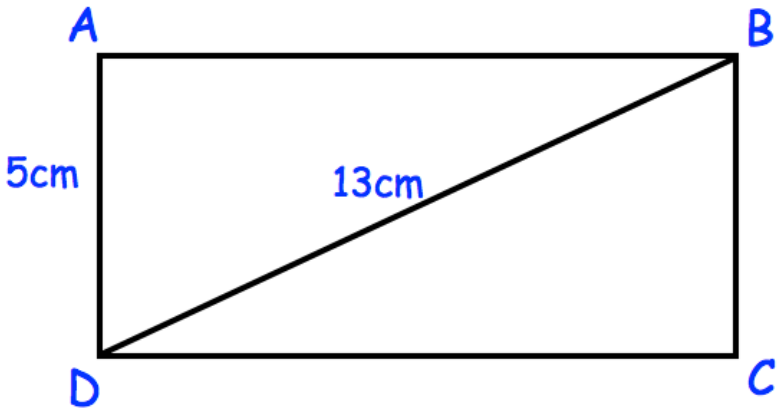
---

47. Write down the exact value of Cos 60°

.....

(1)

48. Below is rectangle, ABCD

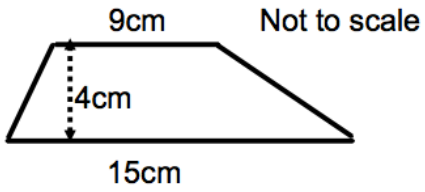


AD = 5cm
BD = 13cm

Calculate the perimeter of rectangle ABCD

.....cm
(3)

49.



Calculate the area of the trapezium.

.....cm²
(2)

50. Candles normally cost £6 each.

Two websites have special offers

Corbettmaths Candles	Candles'R'us
Buy 3 get 1 free	20% off

Laura wants to buy 30 candles.
Which website should Laura use?

(4)

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51. (a) Simplify

$$m^5 \times m^3$$

.....

(1)

(b) Simplify

$$m^8 \div m^2$$

.....

(1)

(c) Simplify

$$(m^3)^2$$

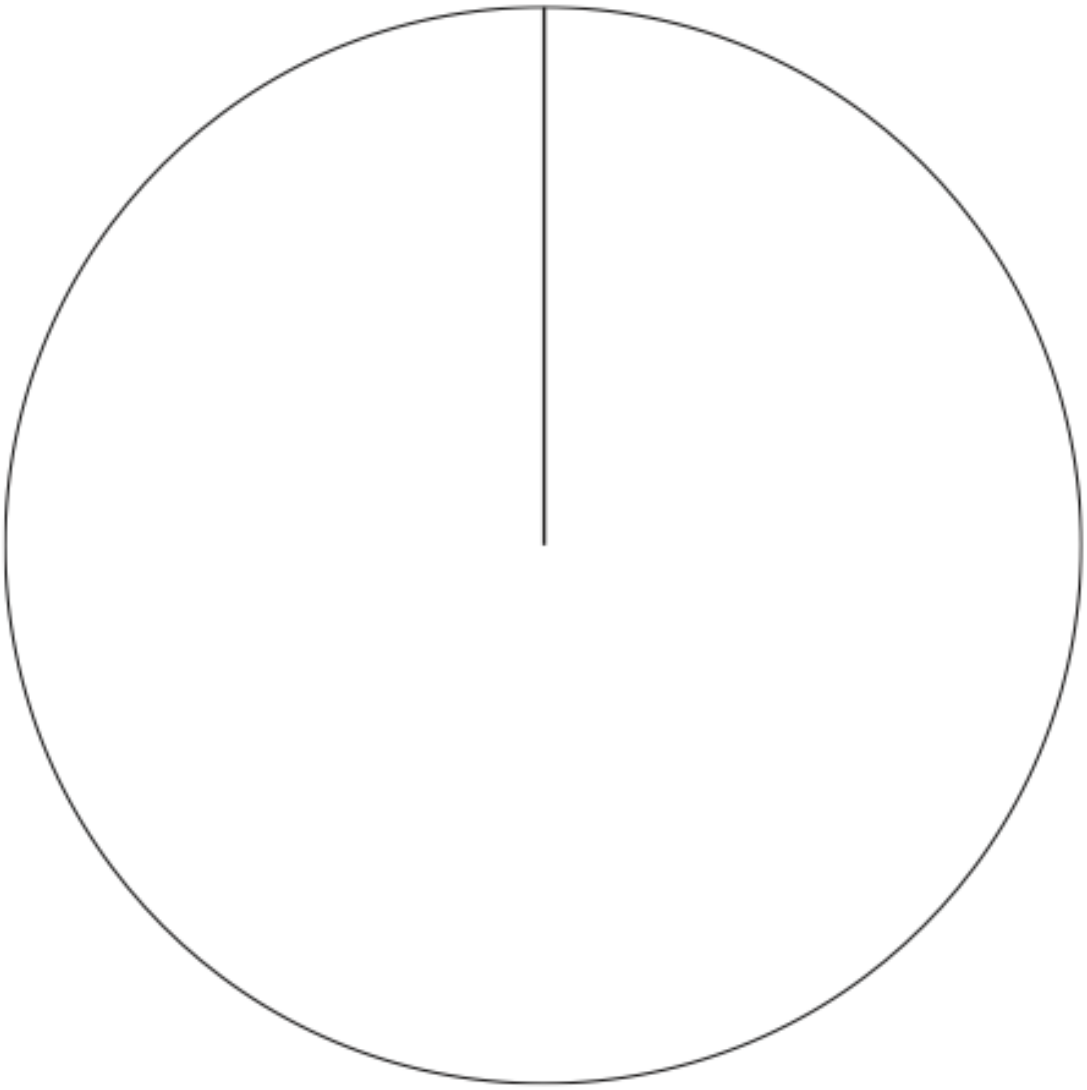
.....

(1)

52. The table gives information about the dogs in a village

Breed	Frequency
Spaniel	11
Poodle	7
Greyhound	4
Jack Russell	14

Draw an accurate pie chart to show this information.



(4)

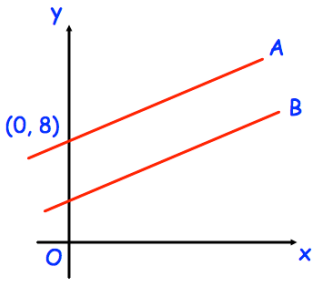
53. The diagram shows the position of two people, A and B, who are on their Duke of Edinburgh expedition.

The bearing of person C from person A is 062°
The bearing of person C from person B is 275°

In the space above, mark the position of person C with a cross (x). Label it C.

(3)

54.



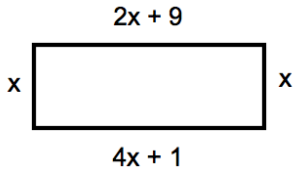
The lines A and B are parallel.
The line A passes through the point (0, 8)
The line B has equation y = 3x + 1

Write down the equation of line A

.....

(2)

55. A rectangle is shown below.



(a) Explain why $4x + 1 = 2x + 9$

.....

.....

(1)

(b) Find the size of x.

x = ...cm

(2)

(c) Work out the area of the rectangle.

.....cm²

(2)

---

56. Solve the simultaneous equations

$3x + 5y = 1$
$2x - 3y = 7$

Do not use trial and improvement

x = ... y = ...

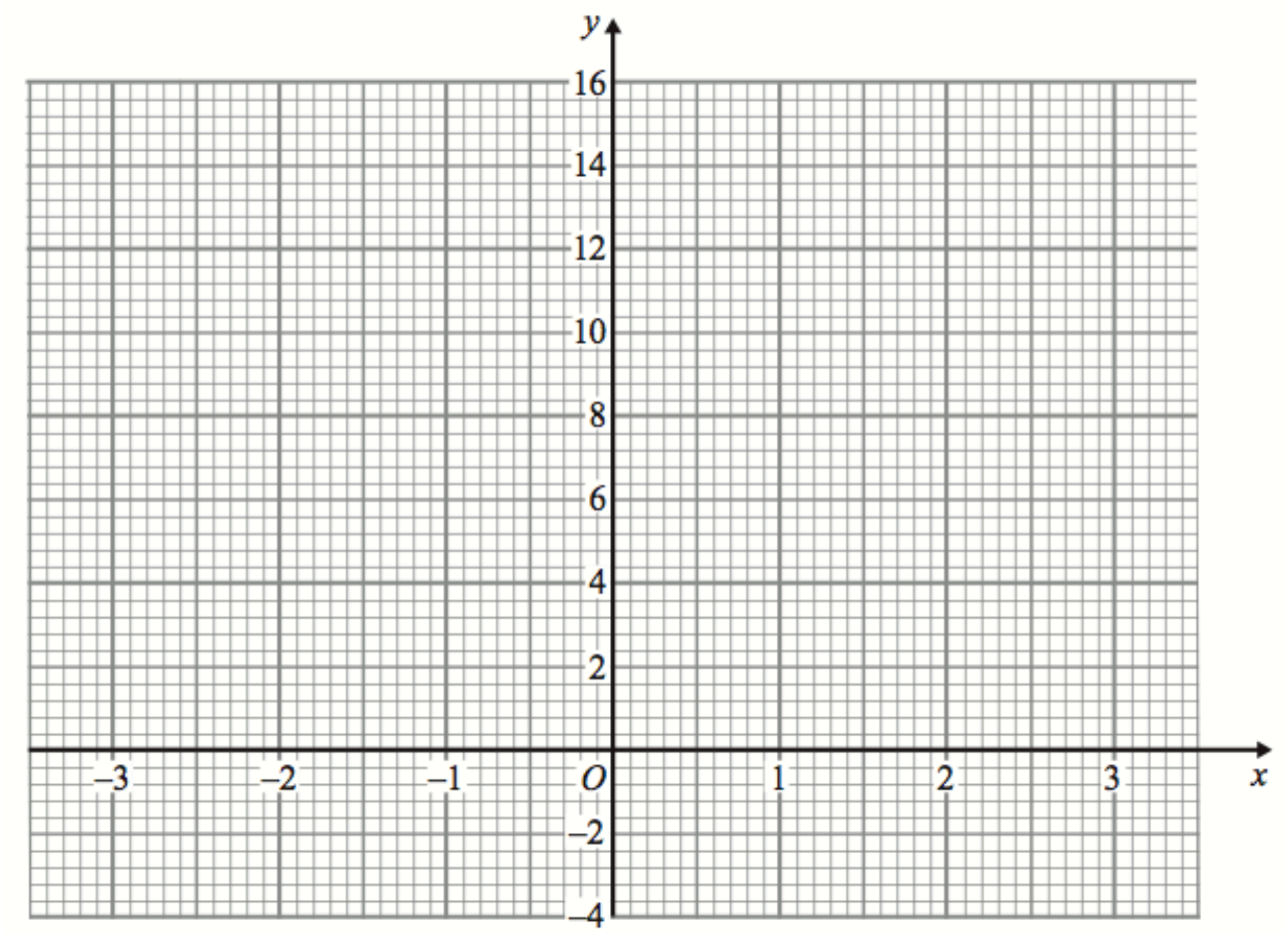
(4)

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

x	-3	-2	-1	0	1	2	3
y	6		0		2	6	

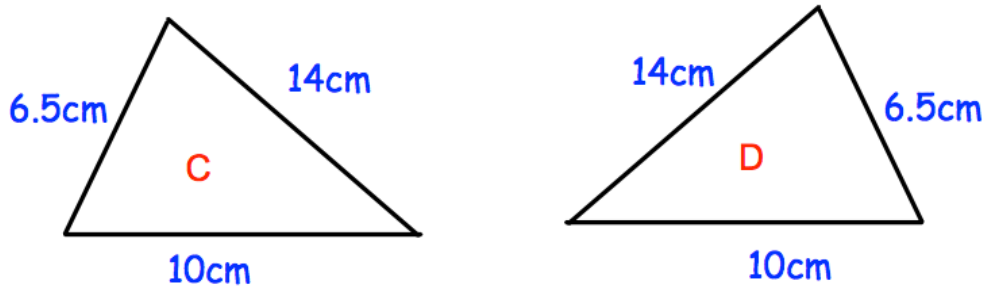
(2)

(b) On the grid, draw the graph of $y = x^2 + x$ for the values of x from -3 to 3.



(2)

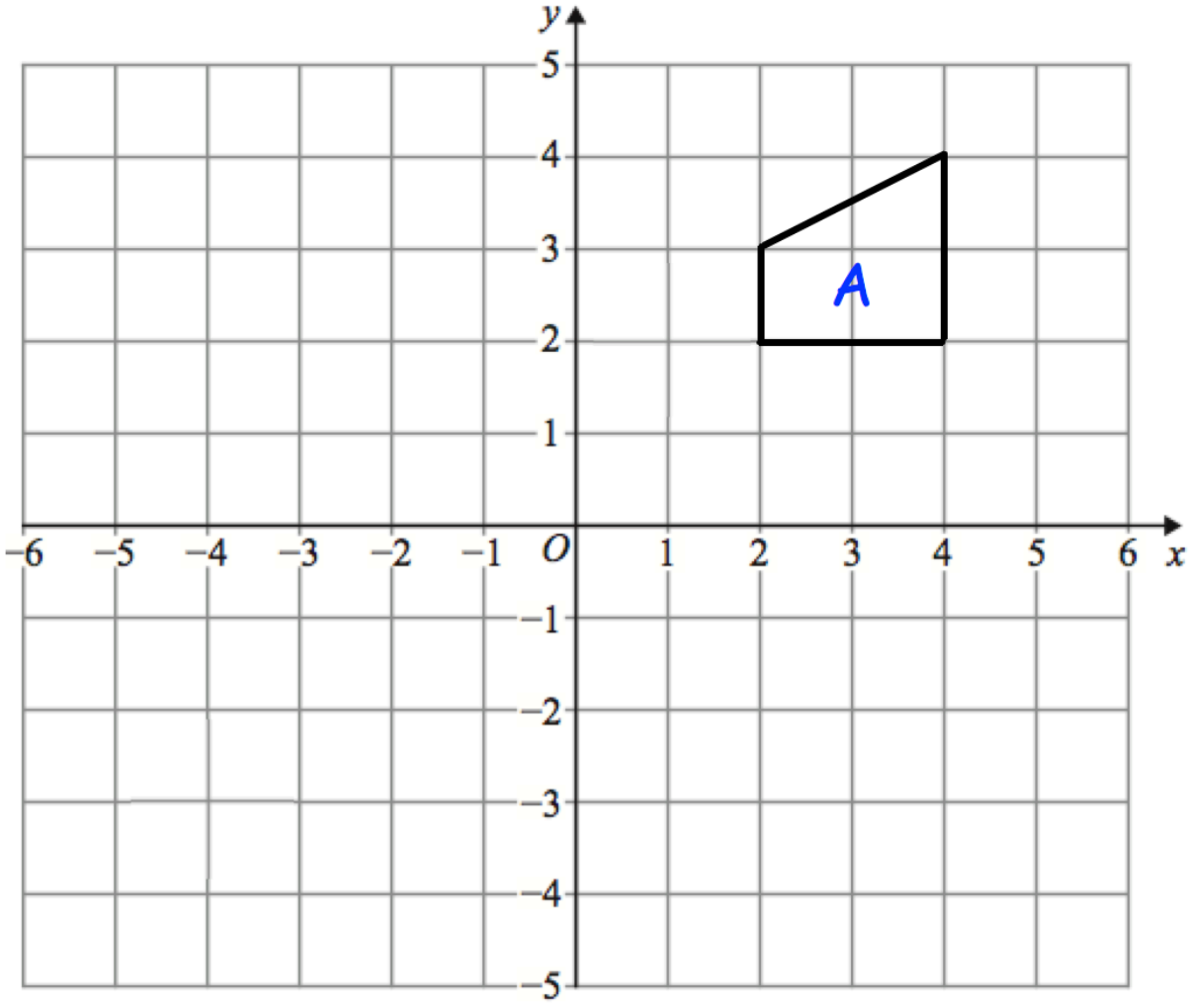
58. For the pair of triangles below, state the condition why they are congruent.



Condition: .....

(1)

59.



Rotate shape A 180° about centre (–1, 2)

(3)

60. A large coffee costs £3.20

A medium coffee costs $\frac{3}{4}$ of the price of a large coffee.

Work out the total cost of 5 large coffees and 2 medium coffees.

.....

(4)

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61. Complete the table.

Fraction	Decimal	Percentage
		85%
	0.12	
$\frac{23}{25}$		

(4)

62. The number of hours of sunshine on a day, across a number of cities is shown below.

☼ = 2 hours of sunshine

Norwich	☼ ☼ ☼ ☼ ☼ ◁
Dublin	☼ ☼ ☼ ☼
Belfast	☼ ☼ ☼ ◁
Aberdeen	☼ ☼
Cardiff	☼ ☼ ☼ ☼
Glasgow	

(a) How many more hours of sunshine was there in Norwich than Belfast?

.....hours

(1)

In Glasgow there was 9 hours of sunshine.

(b) Complete the pictogram.

(2)

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63. Magnus flips a fair coin once and rolls an ordinary dice once.

(a) Write down all the possible outcomes.

.....

.....

.....

(2)

(b) Find the probability that Magnus gets a head and a 3.

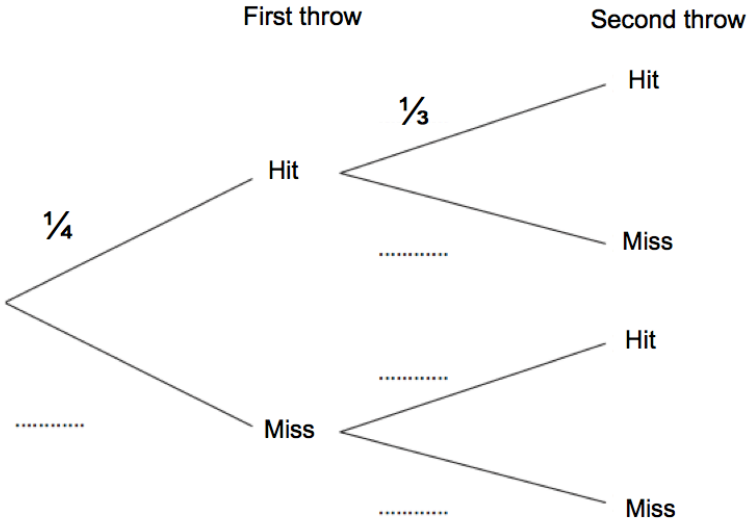
.....

(1)

64. Jennifer is playing darts.
She throws two darts aiming for a Bullseye.

The probability Jennifer hits the Bullseye on her first throw is ¼.
The probability she hits the Bullseye on her second throw ⅓.

(a) Complete the tree diagram.



(b) Work out the probability Jennifer hits the Bullseye at least once.

.....

(2)

65.

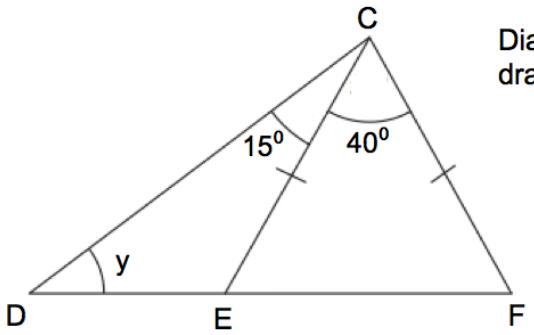


Diagram not drawn accurately

DEF is a straight line.
CE = CF.
Angle ECF is 40°
Angle DCE is 15°

Find the size of the angle marked y.

.....°

(4)

66. Complete the table below.

	Faces	Edges	Vertices
Cube			8
Square-based Pyramid	5		
Triangular Prism		9	

(6)

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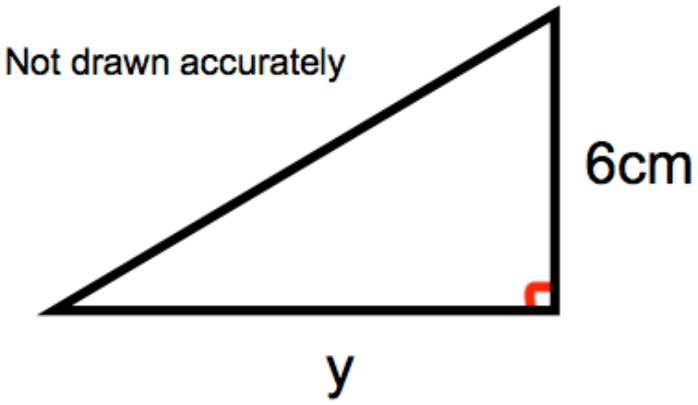
67. Shown below is a right-angled triangle.

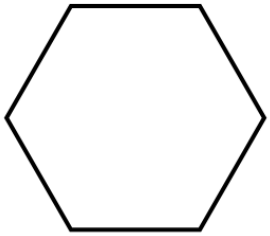


The area of the triangle is 21cm²
Calculate y, the length of the base.

.....cm

(2)

68. The diagram below shows a regular hexagon.



(a) Write down the order of rotational symmetry of the hexagon.

.....

(1)

(b) On the diagram draw in all the lines of symmetry.

(2)

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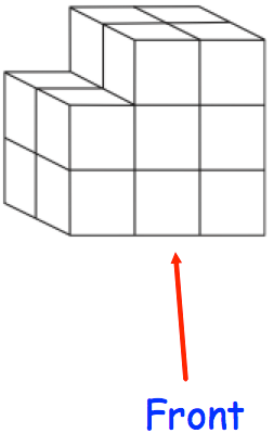
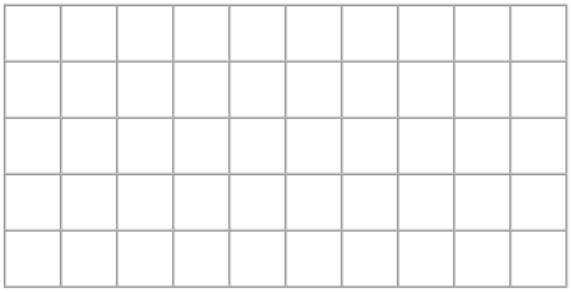
69. The diagram below shows a shape made with centimetre cubes.



On the centimetre square grid, draw the front elevation.



(2)

70. A holiday costs £1670

Lorenzo will pay a deposit of £250
He will then pay the rest of the cost in 8 equal monthly payments.

Work out the amount of each monthly payment.

£.....

(3)

---

71. Shown below is a conversion to change between kilograms and pounds.

(a) Using the graph, convert 5 kilograms to pounds.

.....pounds

(1)

(b) Using the graph, convert 8 pounds to kilograms.

.....kilograms

(1)

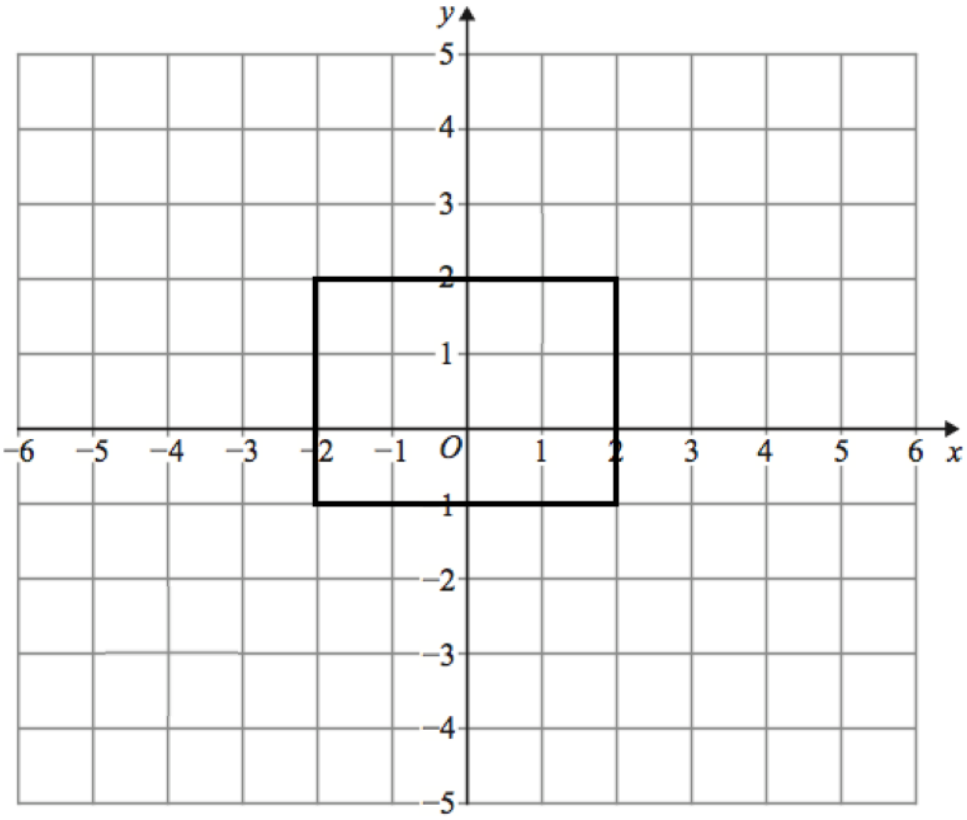
A piano weighs 150 kilograms.

(c) Change 150 kilograms to pounds.

.....pounds

(2)

72. Shown below is a rectangle drawn on a coordinate grid.



Enlarge the rectangle by scale factor 2, using centre of enlargement (–1, 0).

(3)

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73. A tennis club has 165 adult and child members.

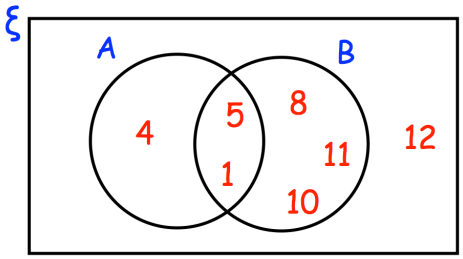
The mean age of the 55 child members is 14 years.
The mean age of the 110 adult members is 40.7 years

Calculate the mean age of all 165 members.

.....

(3)

74. Here is a Venn diagram.



A number is chosen at random.

(a) Write down $P(A \cap B)$

.....

(2)

(b) Write down $P(A \cup B)$

.....

(2)

---

75. The heights of 7 children are shown below.

132cm 1.2m 98cm 0.99m 116cm 1.4m 1.33m

(a) Change 132cm into metres.

.....m

(1)

(b) Change 98cm into metres.

.....m

(1)

(c) Order the heights, starting with the shortest.

.....

(1)

(d) Work out the median.

.....

(1)

76. Here is part of a train timetable.

	Departure times			
Antrim	12:30	13:00	14:00	16:00
Randalstown	12:45	13:15	14:15	16:15
Ballymena	13:01	13:31	14:31	16:31
Ballycastle	13:39	14:09	15:09	17:09

Freddy wants to travel from Randalstown to Ballycastle.
He arrives at Randalstown at 13:03 to catch the next train to Ballycastle.

(a) How long does this train journey take?

.....minutes
(2)

Jennifer lives in Antrim and her friend lives in Ballymena.
Jennifer lives a 5 minute walk from Antrim train station.
Her friend lives a 30 minute walk from Ballymena train station.
Jennifer wants to arrive at her friend's house **before** 3pm.
Plan Jennifer's journey to her friend's house.

(5)

77. The temperature, in °C, at midnight at a weather station on 5 days was recorded

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Temperature	-4	1	-6	1	-2

(a) What fraction of the days had a temperature below 0°C?

.....

(1)

(b) What is the range of the temperatures?

.....°C

(1)

---

78. (a) Make *u* the subject of the formula

$$v = u + 10t$$

u = ...

(2)

(b) Make *t* the subject of the formula

$$v = u + 10t$$

t = ...

(2)