



Corbettmaths

100 Days to Go
GCSE Higher
Revision Questions

Part 1

100 Days to Go



Answers

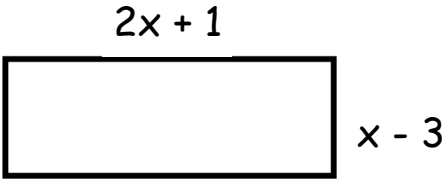
See 43 Days
to Go

1. Write 80 as a product of its prime factors.



.....
(2)

2. A rectangle is shown below.



The length of the rectangle is $2x + 1$ cm.
The width of the rectangle is $x - 3$ cm.

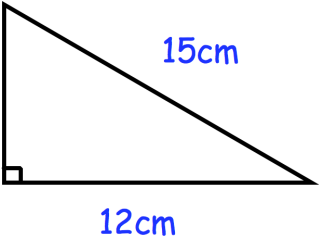
Form an expression for the area of the rectangle.

.....
(3)

3. Shown is a right-angled triangle.

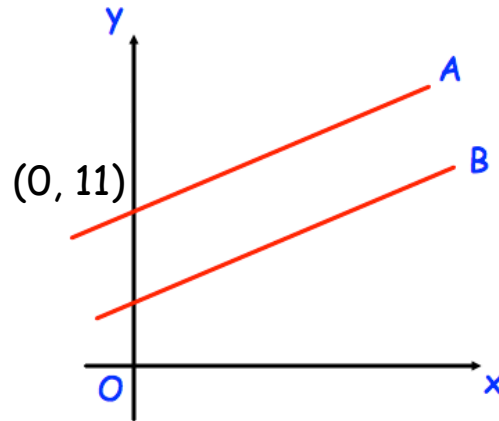


Work out the perimeter of the triangle



.....
(4)

4.



The lines A and B are parallel.
The line A passes through the point $(0, 11)$
The line B has equation $y = 2x + 5$

Write down the equation of line A

.....
(2)

5.



10 girls and 15 boys sit a test.

The mean mark for the boys is 76
The mean mark for the girls is 88

Work out the mean mark for the whole class.

.....
(3)

6. (a) Express $\sqrt{50}$ in its simplest form



.....
(1)

(b) Arrange the following numbers in order, smallest to largest

$$2\sqrt{13} \quad 5\sqrt{2} \quad 3\sqrt{5} \quad 4\sqrt{3}$$

.....
(3)

7. Expand and simplify $(2x + 1)(x + 3)(x - 5)$



.....
(3)

8. (a) Find the value of $36^{\frac{1}{2}}$



.....
(1)

(b) Find the value of $27^{-\frac{2}{3}}$

.....
(2)

(c) Simplify $(16x^6)^{\frac{3}{2}}$

.....
(2)

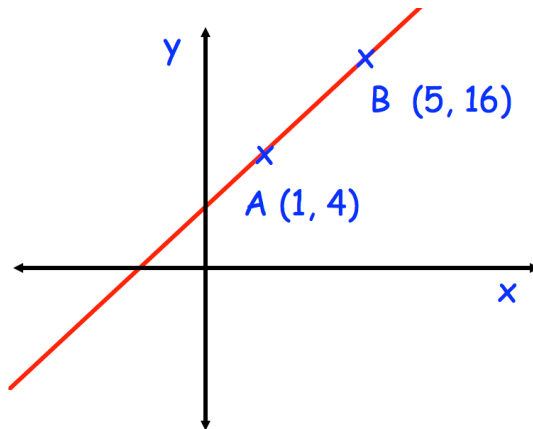
9. Orla has 6 black socks, 3 white socks and 2 blue socks.
She picks two socks at random, without replacement.



Calculate the probability she chooses two socks of the same colour.

.....
(4)

10. A straight line passes through the points A(1, 4) and B(5, 16).



Find the equation of the line perpendicular to AB that passes through the point B.

.....
(3)

11. (a) Write the number 0.00518 in standard form



.....
(1)

(b) Calculate $(9 \times 10^6)^{-3}$

Give your answer in standard form.

.....
(2)

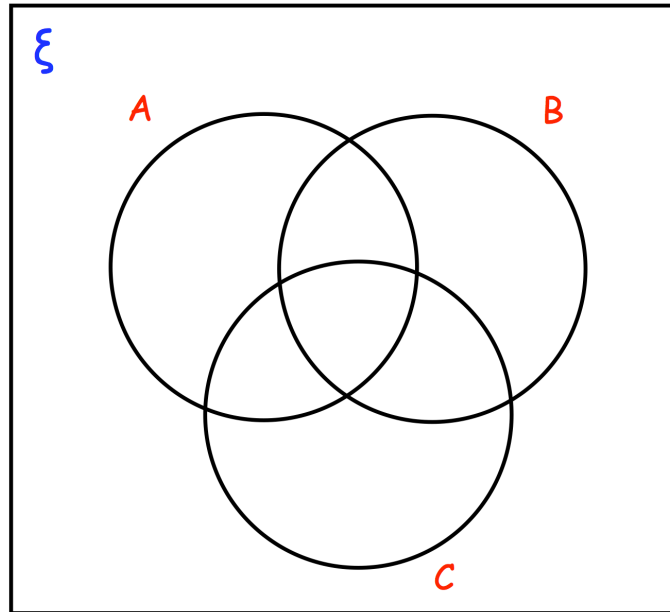
12. $\xi = \{\text{multiple of 3 between 1 and 29}\}$



$A = \{3, 9, 21, 27\}$

$B = \{3, 6, 9, 12, 15\}$

$C = \{6, 9, 15, 18, 21\}$



(a) Complete the Venn diagram above

(4)

A number is chosen at random from ξ

(b) Find $P(A \cap C)$

.....
(2)

13. Yvonne rounds a number, y to 1 decimal place.



Her result is 8.4

Write down the error interval for y

.....
(2)

14 Bethan owns 6 shops and 3 restaurants.



She is going to visit three of her businesses and writes her list in order.
The order will be:

shop, restaurant, shop

or

restaurant, shop, restaurant

Find how many different lists can Bethan write.

.....
(4)

15. The equation of a circle is $x^2 + y^2 = 36$



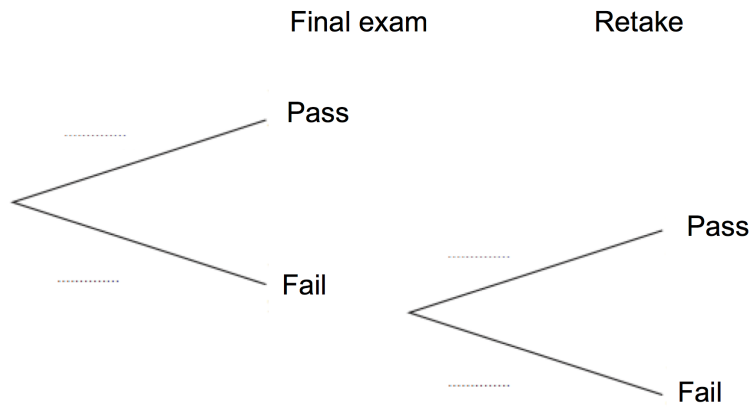
Find the circumference of the circle.
Give your answer to 1 decimal place.

.....
(3)

16. A college course consists of 8 weeks of teaching with a final exam at the end of the course



If a student fails the final exam, they have one opportunity to retake the exam.
 The probability of a student passing the final exam is 0.6
 The probability of a student passing the retake is 0.8



(a) Complete the tree diagram

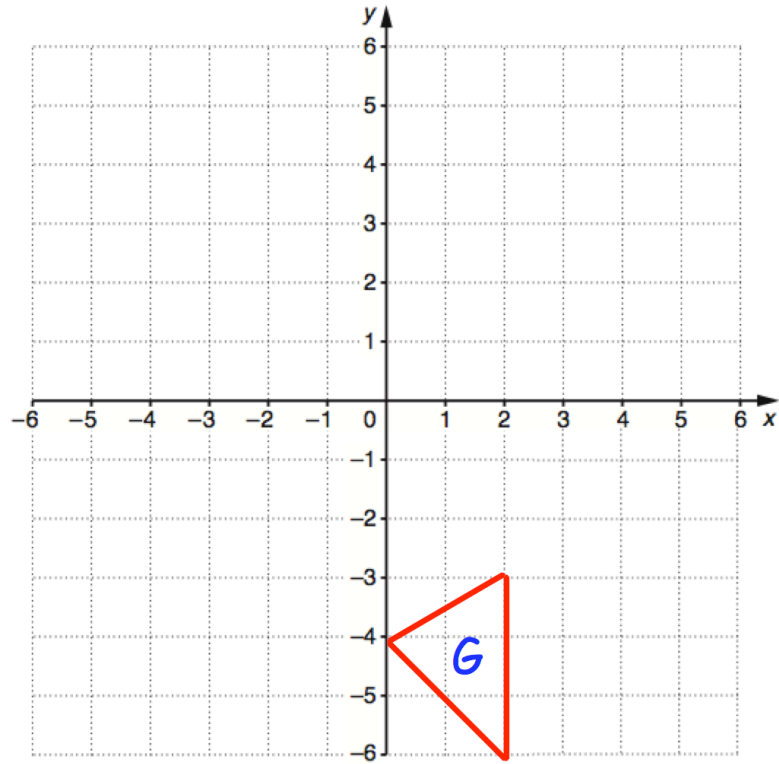
(2)

If a student passes the final exam or retake, they receive a certificate.

(b) Work out the probability that a student receives a certificate.

.....
(2)

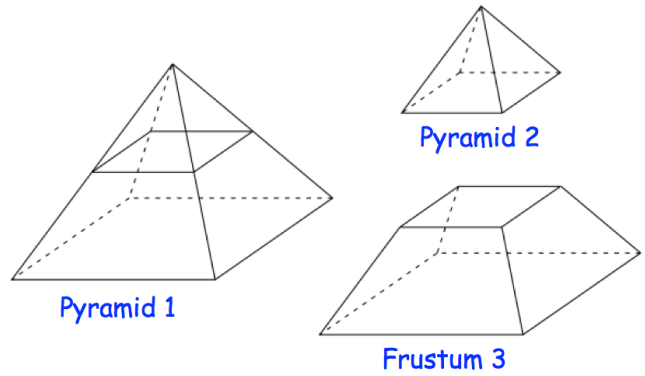
17.



Rotate triangle G 90° anticlockwise about $(-1, -2)$

(2)

18. A solid square based pyramid 1 is divided into two parts: a square based pyramid 2 and a frustum 3, as shown.



Pyramid 1 has a base of side length 12cm.
Pyramid 2 has a base of side length 4cm.
The perpendicular height of pyramid 1 is 15cm.

Frustum 3 is made from a material with a density of 4.8g/cm^3

Work out the mass of the frustum.

.....g
(4)

19. The table shows the distance travelled to school by 50 students.



Distance (miles)	Frequency
$0 < d \leq 2$	22
$2 < d \leq 4$	10
$4 < d \leq 6$	11
$6 < d \leq 8$	4
$8 < d \leq 10$	3

Calculate an estimate of the mean distance travelled.

.....
(3)

20. The surface areas of two mathematically similar shapes are in the ratio 4 : 9

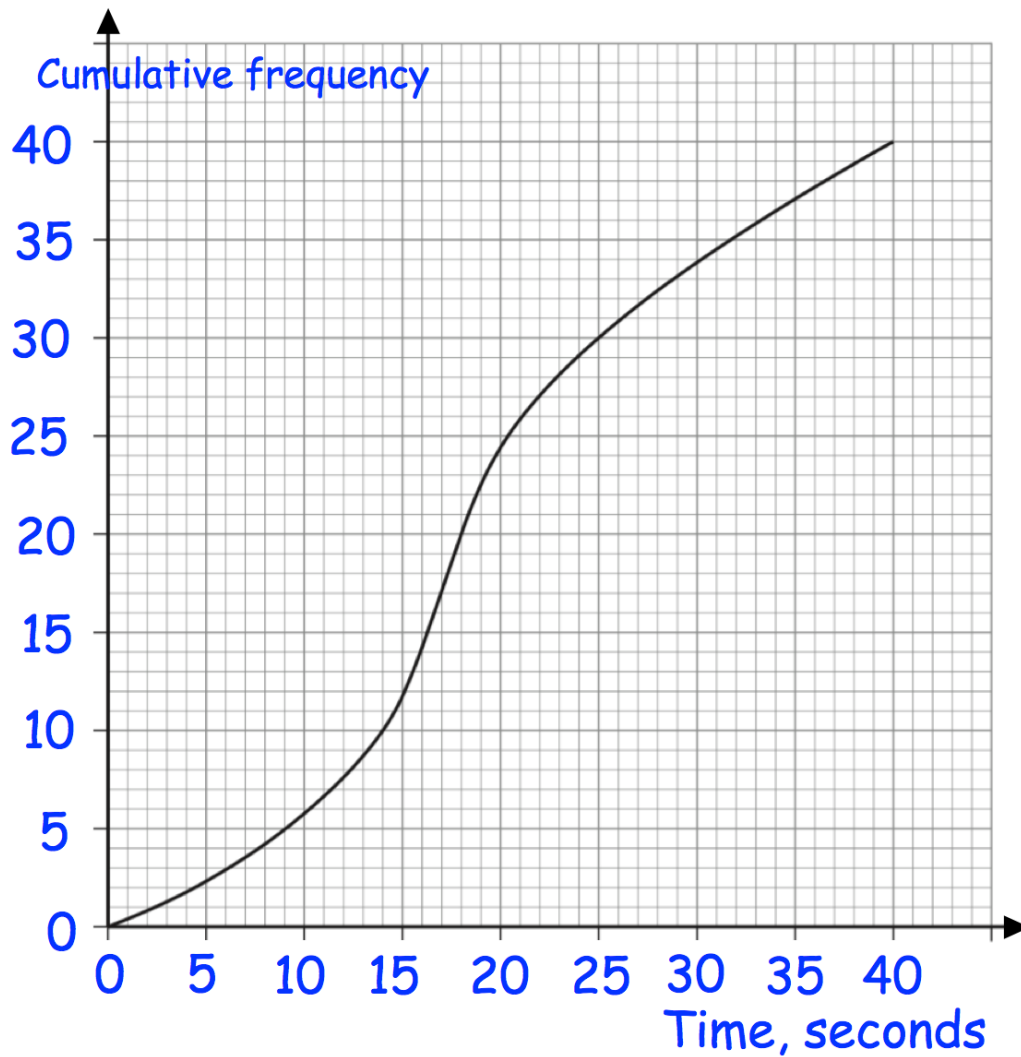


The volume of the smaller solid is 656cm^3

Work out the volume of the larger solid

..... cm^3
(3)

21. The graph shows information about the time taken by 40 children to solve a puzzle.



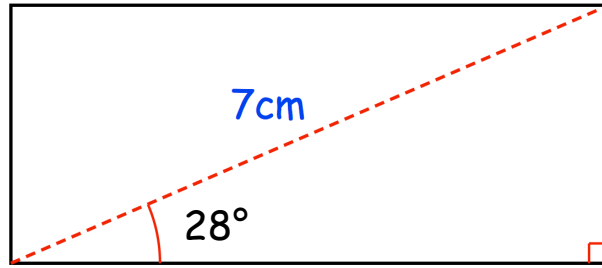
- (a) Use the graph to find an estimate for the median time taken.

.....
(1)

- (b) Estimate how many students took longer than 35 seconds to solve the puzzle.

.....
(1)

22.



Work out the area of the rectangle

.....cm²
(4)

23. (a) Factorise $2x^2 - x - 21$



.....
(2)

(b) Solve $2x^2 - x - 21 = 0$

.....
(1)

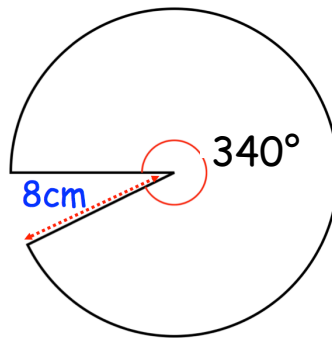
24. Make y the subject



$$7y - 9x = xy + 2$$

.....
(3)

25.



Find the area of the sector above.
Give your answer to 2 decimal places.

.....cm²
(3)

26. An energy bar contains 6.6g of protein.
15% of the bar is protein.



What is the total mass of the bar?

.....g
(2)

-
27. Sophie estimated that the distance between Leek and Milton is about 118 miles and that her average driving speed would be 50 mph.



She estimated the distance to the nearest mile and the speed to the nearest 10 mph

Calculate the lower bound of the time the journey should take.

Give your answer in hours and minutes.

Give your answer to the nearest minute.

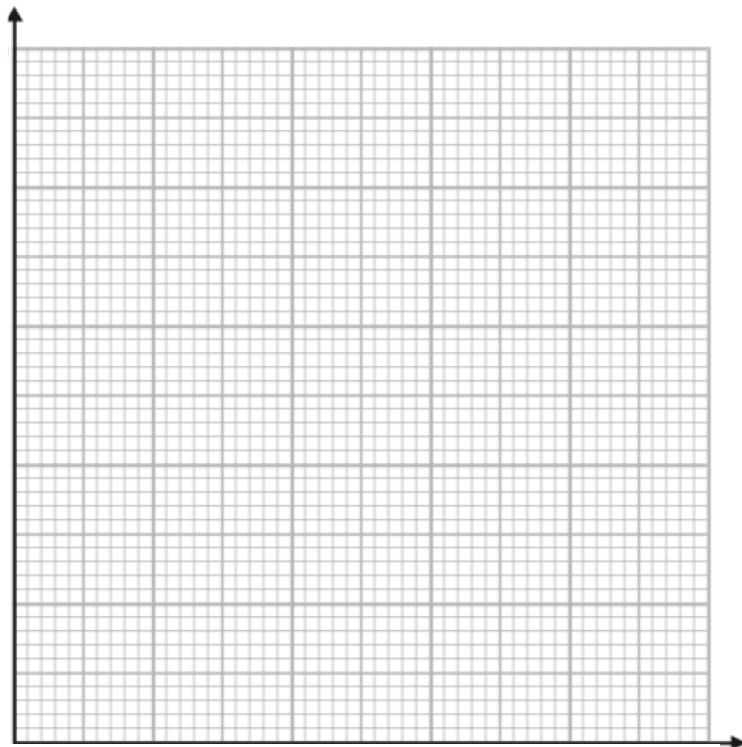
.....hoursminutes
(4)

28. The waiting times, h hours, for 40 patients at an accident and emergency department in one evening is shown below.



Waiting time, h	Frequency
$0 < h \leq 0.5$	8
$0.5 < h \leq 1$	10
$1 < h \leq 1.5$	7
$1.5 < h \leq 3$	9
$3 < h \leq 5$	6

Draw a histogram for this data.



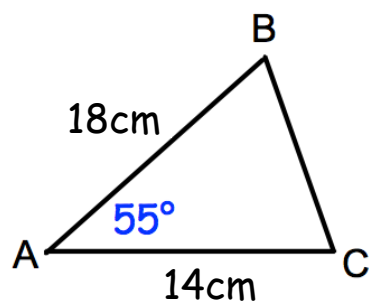
(3)

29. Show, using algebra, that $1.0\dot{5}\dot{1} = 1\frac{17}{330}$



(3)

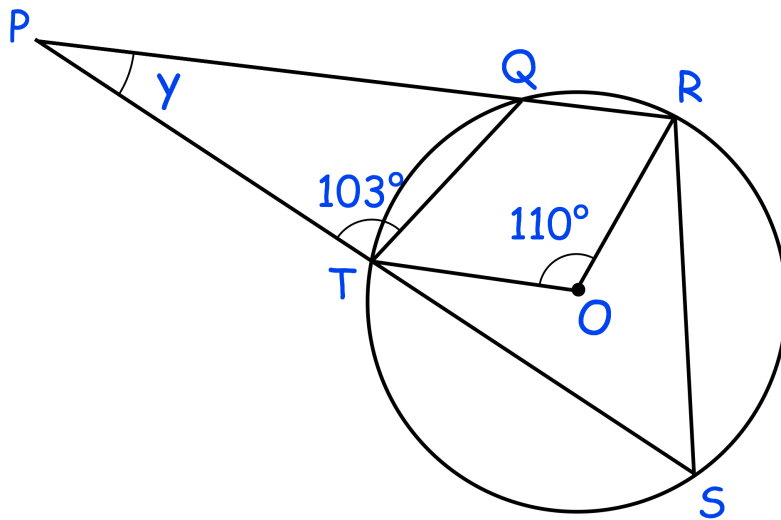
30.



Calculate the length of BC.

.....cm
(3)

31. Q, R, S and T are points on the circumference of a circle, centre O.



PQR and PTS are both straight lines.

Find the size of angle RPS.

You must show all of your working.

.....°
(3)

32. Solve the simultaneous equations



$$5x + 2y = -34$$

$$4x - 3y = -41$$

x = y =
(4)

33. £5000 is invested at 5.4% compound interest per annum.



How many years will it take for the investment to exceed £8000.

.....
(3)