

Name: Answers

**GCSE 9-1 Foundation  
Practice Paper  
Set D  
Paper 3 - Calculator**



**Corbettmaths**

**Equipment**

1. A black ink ball-point pen.
2. A pencil.
3. An eraser.
4. A ruler.
5. A pair of compasses.
6. A protractor.
7. A calculator

**Guidance**

1. Read each question carefully.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

**Information**

1. Time: 1 hour 30 minutes
2. The maximum mark for this paper is 80.
3. You may use tracing paper.

Question	Mark	Available
1		2
2		2
3		2
4		2
5		2
6		6
7		2
8		2
9		5
10		4
11		4
12		3
13		5
14		4
15		5
16		3
17		3
18		3
19		4
20		4
21		5
22		4
23		2
24		2
<b>Total</b>		<b>80</b>

1. The table shows information about five different laptops.

Name	Price (£)	Mass (kg)	Thickness (cm)	Battery (minutes)
Epic	£799	1.23	1.89	690
Bell	£1249	1.2	1.52	650
Lemon	£1599	1.37	1.49	<u>720</u>
HB	£799	1.28	1.7	740
Lazer	£1049	1.35	1.66	660

- (a) Which laptop cost the most?

Lemon

(1)

Rebecca says that the Lemon laptop has a battery life of 12 hours.

- (b) Show Rebecca is correct.

$$\begin{aligned} 720 \text{ minutes} &= 720 \div 60 \text{ hours} \\ &= 12 \text{ hours} \end{aligned}$$

(1)

2. 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.

$$\begin{array}{r} 24s + 9t \\ \hline \end{array} \quad (2)$$

3. Here are four digits.

7      4      9      5

(a) Use two of these digits to make the largest possible two-digit number.

$$\begin{array}{r} 97 \\ \hline \end{array} \quad (1)$$

(b) Use all four of these digits to make the four-digit number closest to 5000.

$$\begin{array}{r} 4975 \\ \hline \end{array} \quad (1)$$

4.  $\frac{3}{4}$  of a number is 24.

Find the number.

$$24 \div 3 = 8$$

$$8 \times 4 =$$

$$\begin{array}{r} 32 \\ \hline \end{array} \quad (2)$$

5.  $\frac{3}{5}$  of the buses arriving in a town are late.

(a) Write down the ratio of on time buses to late buses.

$\frac{2}{5}$  on time

$$\frac{2}{5} : \frac{3}{5} =$$

$$\begin{array}{r} 2:3 \\ \hline \end{array} \quad (1)$$

(b) Write down the percentage of buses that are late.

$$\frac{3}{5} = 60\%$$

$$\begin{array}{r} 60 \\ \hline \end{array} \% \quad (1)$$

6. Mervyn plays six games of darts.

His scores are

120 71 80 14 90 117

- (a) Work out the range of his scores.

$$120 - 14 =$$

$$\begin{array}{r} 106 \\ \hline (2) \end{array}$$

- (b) Work out the median of his scores.

$$14, 71, \underbrace{80, 90}_{85}, 117, 120$$

$$\begin{array}{r} 85 \\ \hline (2) \end{array}$$

- (c) Work out the mean of his scores.

$$14 + 71 + 80 + 90 + 117 + 120 = 492$$

$$\div 6 =$$

$$\begin{array}{r} 82 \\ \hline (2) \end{array}$$



7. Ralph has 9 cards, each with a number on it.



He picks a card at random.

Write down the probability that the chosen card is a square number.

$$\frac{3}{9}$$

.....  
(2)

8. Leah bought a new car costing £18,000  
She paid a deposit of £2,000.  
Leah paid the rest of the money over 25 equal monthly payments.

How much was each monthly payment?

$$18000 - 2000 = £16000$$

$$16000 \div 25 =$$

$$£ \frac{640}{(2)}$$

9. Here is part of a bus timetable.

	Departure times			
Newry	14:15	14:45	15:20	15:40
Banbridge	14:37	15:07	15:42	16:02
Dromore	14:48	15:18	15:53	16:13
Belfast	15:18	15:48	16:23	16:43

Niall lives in Newry and his friend lives in Dromore.

Niall lives a 10 minute walk from Newry bus station.

His friend lives a 20 minutes walk from Dromore bus stop.

Niall wants to plan a journey to arrive at his friend's house before 4pm.

Plan Niall's journey.

Leave home : 1405  
                   ↓  
           10min walk  
                   ↓  
 Catch bus      14:15  
   at Newry       ↓  
 arrive at       14:48  
   Dromore       ↓  
                   20 minute walk  
                   ↓  
 arrive at       15:08  
   Friend's

(can also catch the 14:45 bus)

10. Robert is  $x$  years old.  
Hannah is 7 years younger than Robert

The sum of their ages is 61.

- (a) Form an equation in terms of  $x$

$$x + x - 7 = 61$$

$$\begin{array}{r} 2x - 7 = 61 \\ \hline (2) \end{array}$$

- (b) Solve the equation and work out Robert's age.

$$2x - 7 = 61$$

$$2x = 68$$

$$x = 34$$

$$\begin{array}{r} 34 \\ \hline (2) \end{array}$$



11.  $W = 8a - 3$

(a) Work out  $W$  when  $a = 7$

$$8 \times 7 - 3 =$$

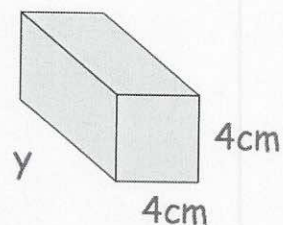
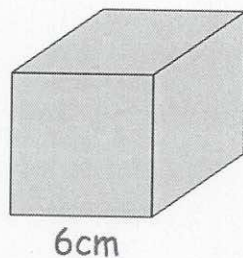
$$W = \underline{53} \dots\dots\dots (2)$$

(b) Make  $a$  the subject of  $W = 8a - 3$

$$W + 3 = 8a$$

$$a = \frac{W + 3}{8} \dots\dots\dots (2)$$

12.



The volume of the cube is twice the volume of the cuboid.

Find the length of the cuboid.

$$\text{cube } V = 6^3 = 216\text{cm}^3$$

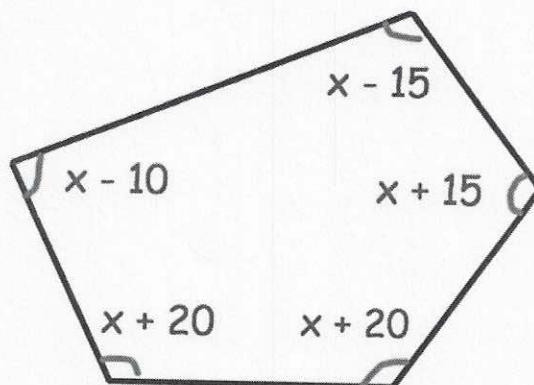
$$\div 2$$

$$4 \times 4 \times y = 108$$

$$y = \frac{108}{16} =$$

$$\underline{6.75} \dots\dots\dots \text{cm} (3)$$

13. Here is a pentagon.



Find the size of  $x$ .

$$\begin{array}{r} x - 15 \\ x + 15 \\ x + 20 \\ x + 20 \\ x - 10 \\ \hline 5x + 30 \end{array}$$

total interior angles of a pentagon =  $540^\circ$

$$5x + 30 = 540$$

$$5x = 510$$

$$x = \frac{510}{5} =$$

$$\frac{102}{(5)}^\circ$$

14. Martina wants to convert £3000 into Euros.  
The Post Office only has €20 notes.

The exchange rate is £1 = €1.17

- (a) Work out how many €20 notes Martina will receive.

$$\begin{aligned} \pounds 3000 \times 1.17 &= \text{€}3510 \\ \div 20 &= 175.5 \end{aligned}$$

175

(3)

The next day the exchange rate changes to £1 = €1.18

- (b) What effect would this have on your answer to (a) ?

$$3000 \times 1.18 \div 20 = 177$$

she would get 2 more notes

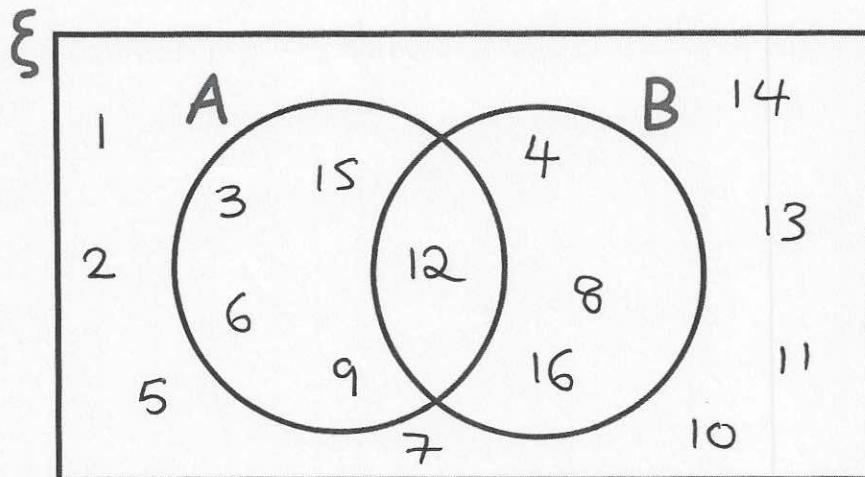
(1)

15.  $\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, \underline{12}, 13, 14, 15, 16\}$

A = multiples of 3

B = multiples of 4

(a) Complete the Venn diagram



(3)

One of the numbers is selected at random.

(b) What is the probability that the number is in the set  $A \cup B$ ?

$$A \cup B = \{3, 6, 9, 12, 15, 4, 8, 16\}$$

$$\frac{8}{16}$$

(2)



16. Solve the simultaneous equations

$$\begin{array}{l} 3x + 2y = 23 \quad (1) \\ 2x - y = 6 \quad (2) \end{array}$$

$$(2) \times 2 \quad 4x - 2y = 12 \quad (3)$$

$$\begin{array}{l} (1) + (3) \quad 7x = 35 \\ x = 5 \end{array}$$

substitute into (1)

$$\begin{array}{l} 15 + 2y = 23 \\ 2y = 8 \\ y = 4 \end{array}$$

$$x = \underline{5}$$

$$y = \underline{4}$$

(3)

17. The frequency table shows the piano grade of 17 students in a class.

Grade	Frequency	
2	3	3
3	3	6
4	4	10
5	3	
6	2	
7	2	

3 new students, who are all Grade 6, join the class.

The teacher says the median piano grade will increase.

Is she correct?

You must explain your answer.

Original median will be the 9<sup>th</sup> student,  
grade 4

3 new students means the median will be between  
the 10<sup>th</sup> & 11<sup>th</sup> student, which is between 4 & 5  
4.5

..... yes, she is correct .....

.....  
(3)

18. The ratio of boys to girls in a school is 4 : 5  
There are 220 boys in the school.

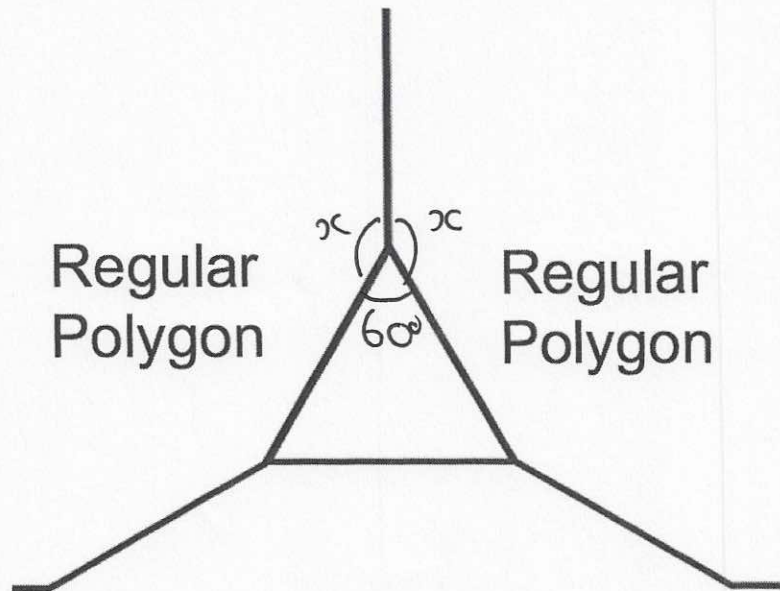
How many students attend the school?

$$220 \div 4 = 55$$

$$55 \times 9 =$$

$$\begin{array}{r} 495 \\ \hline \end{array} \quad (3)$$

19. Shown below are two identical regular polygons and an equilateral triangle.



Calculate the number of sides each regular polygon has.

equilateral triangle has  $60^\circ$  angles

$$2x + 60 = 360$$

$$x = 150^\circ \text{ (interior angle)}$$

$$\therefore \text{exterior angle} = 180 - 150 = 30^\circ$$

$$360 \div 30^\circ =$$

12

(4)



20. Material A has a density of  $5.8\text{g/cm}^3$ .  
Material B has a density of  $4.1\text{g/cm}^3$ .

D M V

377g of Material A and 1.64kg of Material B form Material C.

Work out the density of Material C.

$$A: V = \frac{M}{D} = \frac{377}{5.8} = 65\text{cm}^3$$

+

$$B: V = \frac{M}{D} = \frac{1640}{4.1} = 400\text{cm}^3$$

C:

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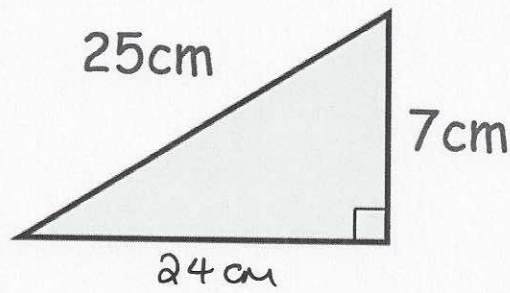
$$V = 465\text{cm}^3$$

$$M = 377 + 1640 \\ = 2017\text{g}$$

$$\text{density} = \frac{2017}{465} = 4.34 \dots \text{g/cm}^3$$

(4)

21. Here is a right angle triangle.



Calculate the area of the triangle.

$$25^2 - 7^2 = 576$$

$$\sqrt{576} = 24$$

$$\text{area} = \frac{1}{2} \times 24 \times 7 =$$

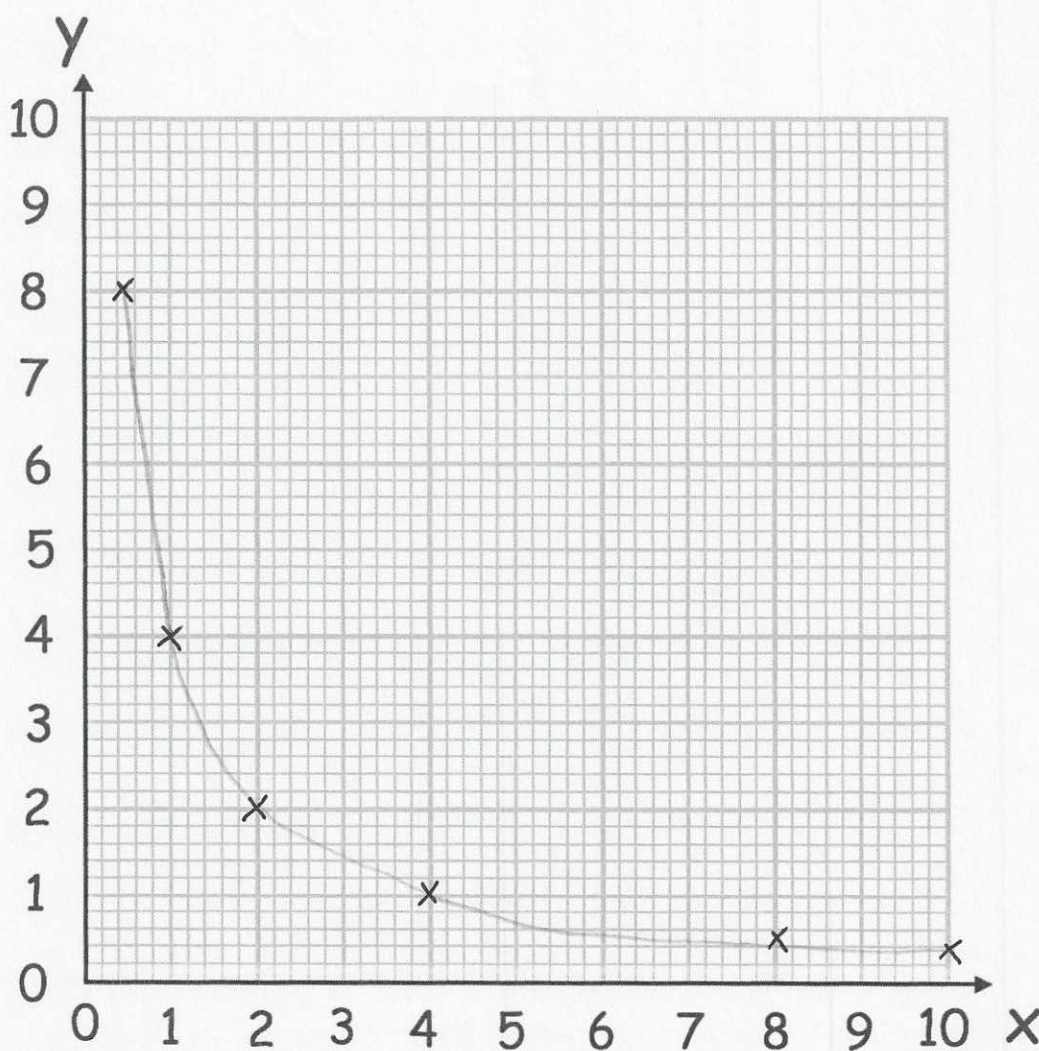
$$\begin{array}{r} 84 \\ \text{.....cm}^2 \\ (5) \end{array}$$

22. (a) Complete the table of value for  $y = \frac{4}{x}$

x	0.5	1	2	4	8	10
y	8	4	2	1	0.5	0.4

(2)

(b) On the grid, draw the graph of  $y = \frac{4}{x}$  for  $0.5 \leq x \leq 10$



(2)

23. The population of an island is 52000 correct to 2 significant figures.

(a) Write down the lowest possible population of the island.

51,500  
.....  
(1)

(b) Write down the greatest possible population of the island.

52,499  
.....  
(1)

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24. Evie is given a 22% pay rise.  
Her new salary is £21960

Work out what Evie's salary was before the pay rise.

$$\text{original} \times 1.22 = 21960$$

$$21960 \div 1.22 =$$

£18000  
.....  
(2)



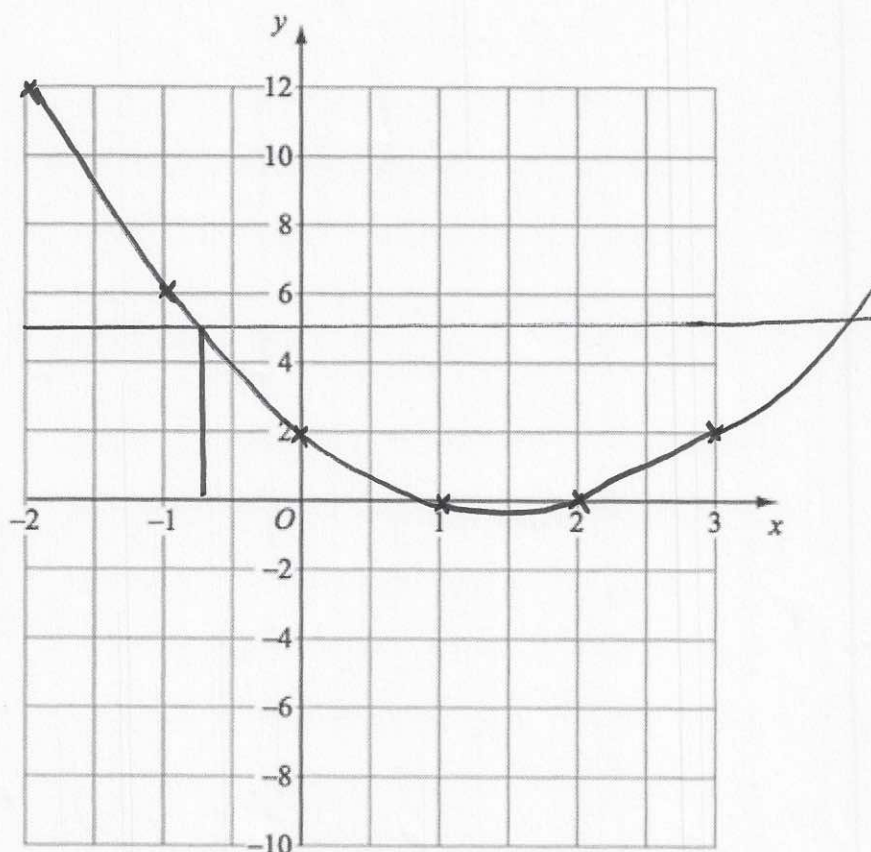
24.

(a) Complete the table of values for  $y = (x - 1)(x - 2)$

x	-2	-1	0	1	2	3
y	12	6	2	0	0	2

(2)

(b) On the grid, draw the graph of  $y = (x - 1)(x - 2)$  for the values of x from -2 to 3



(2)

(c) Use your graph to find estimates of the solutions to the equation  $(x - 1)(x - 2) = 5$

$$x = -0.75 \quad x = 3.75$$

(2)