

Name: *Solutions*

GCSE 9-1 Foundation
Practice Paper
Set B
Paper 1 - Non 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.

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. The marks for questions are shown in brackets
4. You may use tracing paper.

Question	Mark	Available
1		1
2		1
3		1
4		1
5		3
6		2
7		3
8		4
9		2
10		2
11		3
12		3
13		4
14		2
15		4
16		2
17		5
18		4
19		2
20		2
21		4
22		4
23		4
24		4
25		3
26		4
27		4
28		2
Total		80

1. Arrange in order from smallest to largest

0.240 0.300 0.125 0.200 0.199 0.18

0.125, 0.18, 0.199, 0.2, 0.24, 0.3
.....
(1)

2. Write $\frac{4}{5}$ as a decimal

0.8
.....
(1)

3. List all the factors of 20

1, 2, 4, 5, 10, 20
.....
(1)

4. Round 8.4791 to 1 decimal place

8.5
.....
(1)

5. (a) Work out $25 - 8 \times 2$

$$25 - 16 =$$

$$\begin{array}{r} 9 \\ \hline \end{array} \quad (1)$$

- (b) Work out 3^3

$$3 \times 3 \times 3 =$$

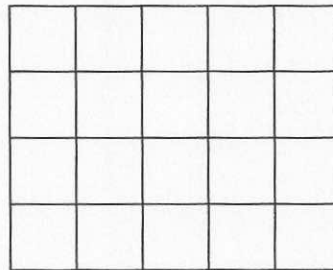
$$\begin{array}{r} 27 \\ \hline \end{array} \quad (1)$$

- (c) Work out $\sqrt{16}$

$$\begin{array}{r} 4 \\ \hline \end{array} \quad (1)$$

-
6. Jamie wants to shade $\frac{1}{3}$ of the grid.

Each square he decides to shade, he must shade in fully.




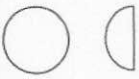
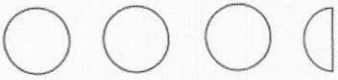
Can he successfully shade in $\frac{1}{3}$ of the grid?


Explain your answer.

No, as there are 20 squares, and 3 isn't a factor of 20

(2)

7. The pictogram below shows the results of Bath City over a season.

Win		= 10
Draw		= 3
Loss		= 7

Key  represents 2 matches

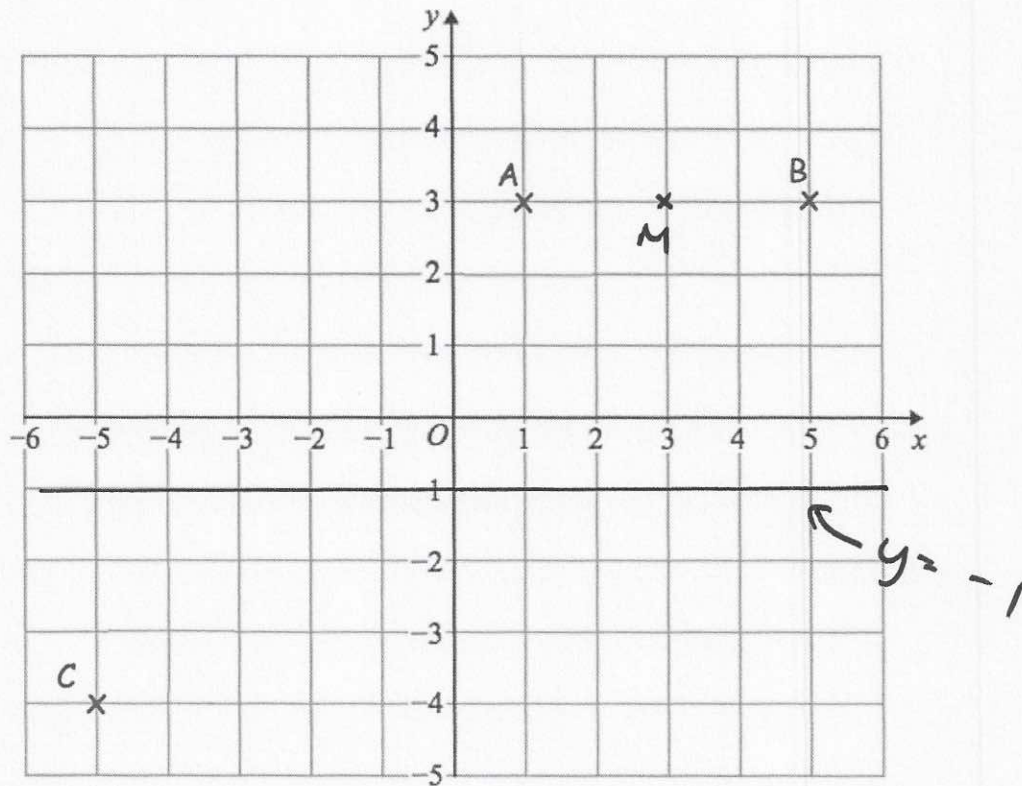
Each win is worth 3 points.
Each draw is worth 1 point.
Each lose is worth 0 points.

How many points did Bath City earn over the season?

$$10 \times 3 + 3 =$$

.....33.....points
(3)

8.



(a) Write down the coordinates of A.

(1, 3)
(1)

(b) Write down the coordinates of C.

(-5, -4)
(1)

M is the midpoint of the line from A to B.

(c) Write down the coordinates of M.

(3, 3)
(1)

(d) Draw the graph of $y = -1$ on the grid.

(1)

9. $w = 8$
 $x = 5$

Work out the value of $7w - 9x$

$$7 \times 8 - 9 \times 5$$
$$= 56 - 45 =$$

.....11.....
(2)

10. Two different **prime numbers** have a sum of 38

$$\boxed{7} + \boxed{31} = 38$$

prime number prime number

Write the two numbers in the boxes above

(2)

11. (a) Circle the two fractions that are **not** equivalent to $\frac{2}{3}$

$$\frac{14}{21} \quad \frac{20}{33} \quad \frac{15}{25} \quad \frac{12}{18}$$

(1)

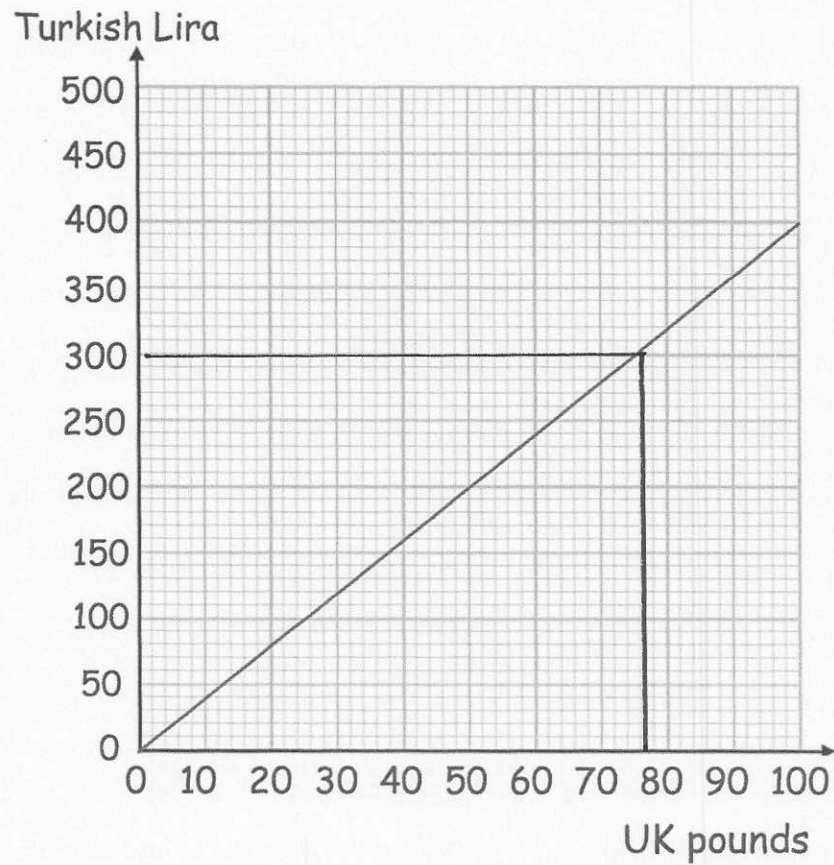
(b) Work out $\frac{8}{9} - \frac{1}{3}$

$$\frac{8}{9} - \frac{3}{9} =$$

$$\frac{5}{9}$$

(2)

12.



Richard has 300 Turkish Lira and £800.

He buys a flight that cost 900 Turkish Lira.

He pays with the 300 Turkish Lira and some of his pounds.

Work out how many pounds he has left.

$$900 - 300 = 600 \text{ Turkish Lira left to pay}$$

$$300 \text{ T.L.} = \pounds 75$$

$$600 \text{ T.L.} = \pounds 150$$

$$800 - 150 =$$

£ 650

(3)

13. Felicity has two boxes of counters, each with an equal ratio of black and white beads.

In box A, 54 of the beads are black and 36 are white.
There are 162 white beads in box B.

Work out how many beads are there in the two boxes in total.

	A $\times 4\frac{1}{2}$	B	
Black	54	\rightarrow	243
white	36	\rightarrow	162

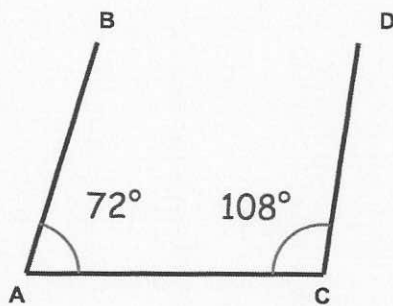
$\times 4\frac{1}{2}$

total = $54 + 36 + 243 + 162$
=

495

(4)

- 14.



Not drawn accurately

Edward says the lines AB and CD are parallel.
Is Edward correct?
Explain your answer.

Yes, since $72^\circ + 108^\circ = 180^\circ$

(2)

15. Charlotte and Melissa booked theatre tickets costing £180. They have a voucher that entitles them to 20% off the total price. Charlotte and Melissa share the total cost of the tickets in the ratio 5:7.

Work out how much more Melissa pays than Charlotte.

$$20\% \text{ of } 180 = \pounds 36$$

$$\therefore \text{ they pay } 180 - 36 = \pounds 144$$

$$144 \div 12 = 12$$

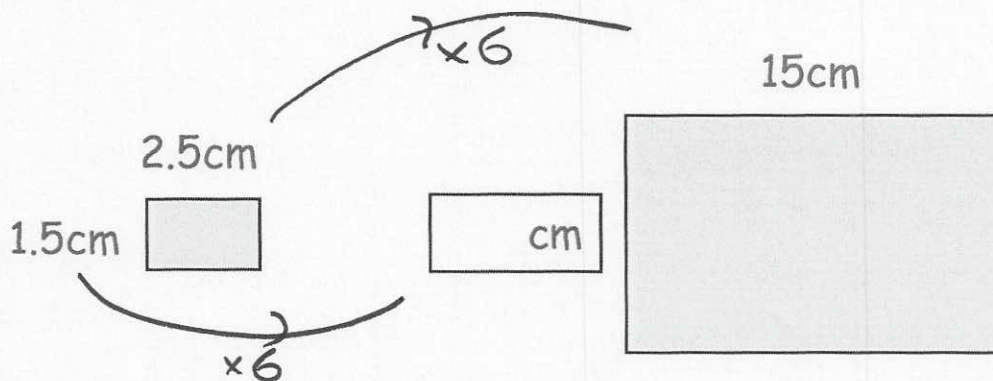
$$C: 5 \times 12 = 60$$

$$M: 7 \times 12 = 84$$

$$84 - 60$$

£ 24
(4)

16. Here are two similar rectangles.



Work out the missing length

$$15 \div 2.5 = 6$$

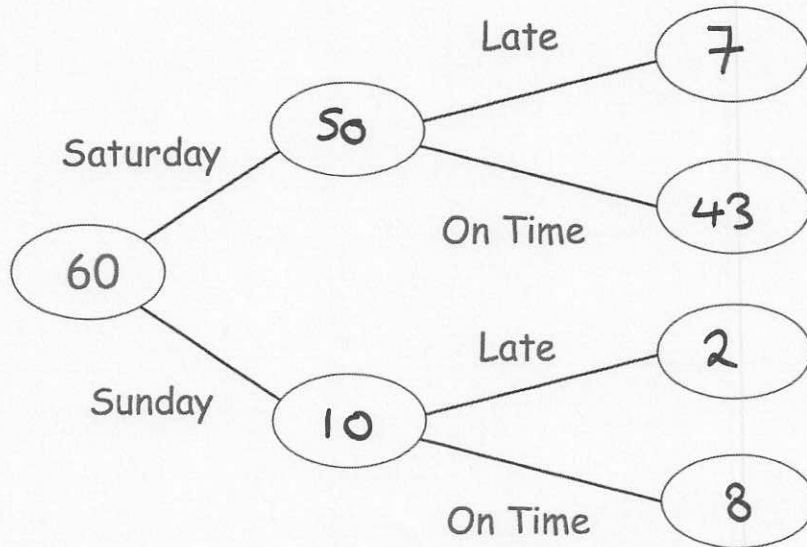
$$1.5 \times 6 =$$

9cm
(2)

17. During a weekend 60 buses arrive in a village.

43 of the 50 buses that arrive on a Saturday are on time.
2 of the buses that are on a Sunday are late.

(a) Show this information on the frequency tree.



(3)

Tiernan says "it is more likely a bus will be late on Saturday than on a Sunday."

Explain why Tiernan is wrong.

$$P(\text{late on Saturday}) = \frac{7}{50}$$

$$P(\text{late on Sunday}) = \frac{2}{10} = \frac{10}{50}$$

∴ probability of being late on Sunday is higher

(2)

18. Flower pots normally cost £4 each.

Two shops have special offers.

Gardenbase
20% off

Lawn Factory
Buy 5 get 2 free

Laura wants to buy 30 flower pots.

Which shop should Laura buy them from?
You must show your working.

Gardenbase:

$$4 \times 30 = \pounds 120 \quad 20\% = \pounds 24$$

$$120 - 24 = \underline{\underline{\pounds 96}}$$

Lawn Factory

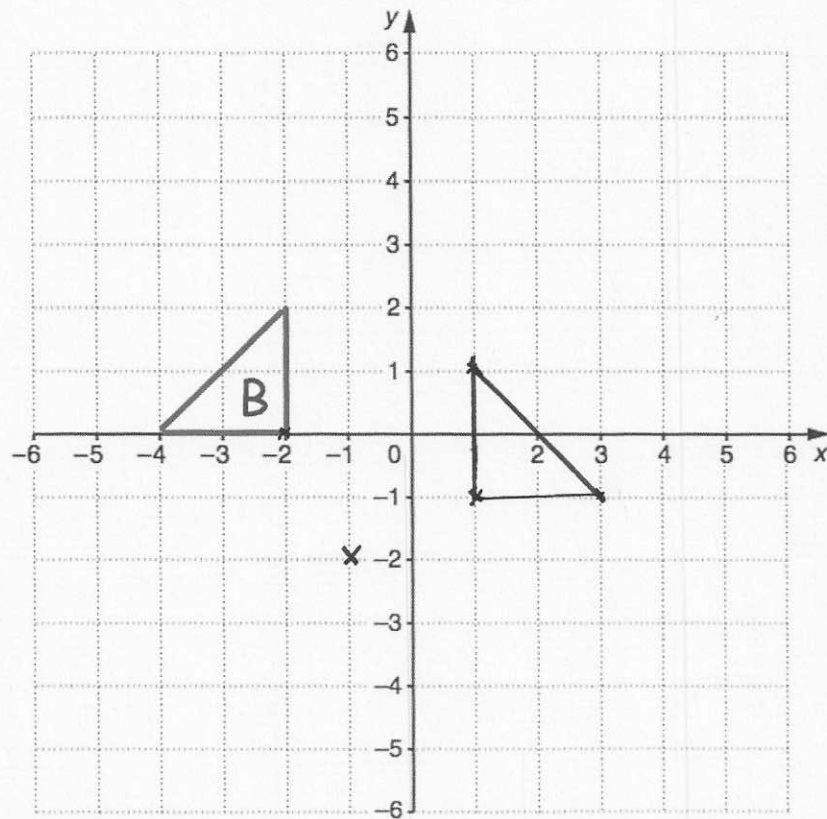
$$7 \text{ cost } 5 \times 4 = \pounds 20$$

$$23 \text{ cost } 20 \times 4 = \pounds 80$$

$$+ 2 \text{ more } = \underline{\underline{\pounds 88}}$$

Lawn factory is
cheaper (4)

19.



Rotate shape **B** 90° clockwise about (-1, -2)

(2)

20. Work out the value of

$$\frac{2^{-4} \times 2^{-3}}{2^{-11}} = \frac{2^{-7}}{2^{-11}} = 2^4 =$$

16

(2)

21. $s = vt - \frac{1}{2}at^2$

$s = 20$ $t = 4$ $a = -3$

(a) Work out the value of v

$$20 = 4v - \frac{1}{2} \times -3 \times 4^2$$

$$20 = 4v + 24$$

$$4v = -4$$

$$v = \frac{-4}{4} = -1$$

(2)

(b) Make a the subject of $s = vt - \frac{1}{2}at^2$

$$vt = s + \frac{1}{2}at^2$$

$$\frac{1}{2}at^2 = vt - s$$

$$at^2 = 2vt - 2s$$

$$a = \frac{2vt - 2s}{t^2}$$

.....
(2)

22. Edward and his four friends go on holiday.
The total cost of the holiday is £3600.

Edward is going to stay longer than his friends and he is going to pay 35% of the total cost.

The rest of the total cost is to be shared equally between his four friends.

Edward says,

"I pay twice as much money for the holiday than each of my friends."

Is Edward correct?
Explain your answer.

$$35\% \text{ of } 3600 = 360 + 360 + 360 + 180 \\ = \pounds 1260$$

$$3600 - 1260 = \pounds 2340$$

$$2340 \div 4 = \pounds 585$$

which is not half of $\pounds 1260$,
so he is incorrect

(4)

23. It would take 48 days for 5 men to build a house.

(a) How much longer would it take if only 4 men built the house?

$$\begin{array}{l} \times 5 \downarrow \quad 48 \text{ days} - 5 \text{ men} \\ \quad \quad \quad 240 \text{ days} - 1 \text{ man} \\ \div 4 \downarrow \quad 60 \text{ days} - 4 \text{ men} \end{array} \quad \begin{array}{l} \dots\dots\dots 60 \\ \dots\dots\dots (3) \end{array}$$

(b) State one assumption you made in working out your answer to (a)

That all the men work at the same rate
.....
..... (1)

24. Helen jogs at an average speed of 9.8 kilometres per hour.

Helen runs 3 kilometres.

(a) Work out an estimate for how long it takes Helen to run 3 kilometres.

$$t = \frac{d}{s} = \frac{3}{10} \text{ hours} \approx 18 \text{ mins}$$

18 mins
..... (3)

(b) Is your answer to (a) an underestimate or an overestimate?

Give a reason for your answer.

under, as I rounded up the speed, so in reality she won't be running as fast
..... (1)

25. Solve the simultaneous equations

$$3x + 5y = 1$$

$$2x - 3y = 7$$

Do not use trial and improvement

$$9x + 15y = 3$$

$$10x - 15y = 35 \quad +$$

$$19x = 38$$

$$x = 2$$

$$6 + 5y = 1$$

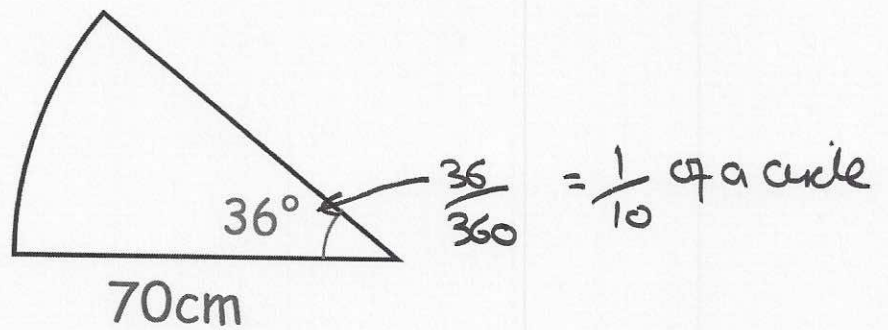
$$5y = -5$$

$$y = -1$$

$$x = \dots 2 \dots y = \dots -1 \dots$$

(3)

26.



For each sector below, calculate the perimeter of this sector.
Leave your answer in terms of π

$$\text{Circumference} = \pi \times d = 140\pi$$

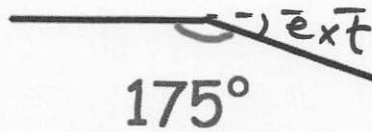
$$\text{arc} = \frac{1}{10} \times 140\pi = 14\pi$$

$$\therefore \text{perimeter} = 14\pi + 70 + 70 =$$

$$\underline{\underline{14\pi + 140}} \text{ cm}$$

(4)

28. Shown below is one interior angle from regular polygons.



Calculate how many sides the polygons have.

$$\text{exterior angle} = 180 - 175 = 5^\circ$$

$$360 \div 5 = 72$$

72
.....
(2)