Name: SOLUTIONS

GCSE 9-1 Foundation
Practice Paper
Set A
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		1
6		3
7		3
8		4
9		1
10		2
11		3
12		3
13		3
14		3
15		3
16		4
17		5
18		3
19		2
20		2
21		1
22		4
23		2
24		3
25		3
26		4
27		4
28		5
29		2
30		3
Total		80

1. (a) Change 0.9 kg into grams

..........900 g..........

(1)

(b) Change 2840 metres into kilometres

..........2.84 km..........

(1)

2. Work out $30 - 9 \times 2$

$30 - 18 =$

..........12..........

(1)

3. Solve $8 - x = 3$

$8 - 5 = 3$

..........$x = 5$..........

(1)

4. Below are seven cards, each with a number written on it.

| -3 | -4 | 6 | 2 | 4 | -7 | 1 |

Choose two suitable cards to make the calculation correct.

| 6 | + | -4 | = 2

(1)

5.   A sequence of numbers starts at 15 and follows the rule

"treble the last number and add 4"

$$15 \quad 49 \quad 151 \quad 457 \ldots$$

The number 4129 is in the sequence.

Calculate the number which comes immediately before 4129 in the sequence

$4129 - 4 = 4125$

$4125 \div 3 = 1375$
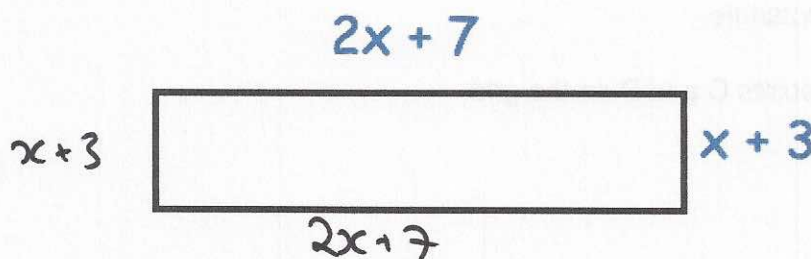
$$\begin{array}{r} 1375 \\ 3\overline{)4^{1}1^{1}2^{1}5} \end{array}$$

......................1375........................

(1)

6.   Shown is a rectangle.

$$2x + 7$$

$x + 3$ [left side] $x + 3$ [right side]

$2x + 7$ [bottom]

The perimeter of the rectangle is P

Find a formula for P in terms of x

$P = 2x + 7 + x + 3 + 2x + 7 + x + 3$

$P = 6x + 20$

......................$P = 6x + 20$........................

(3)

7.
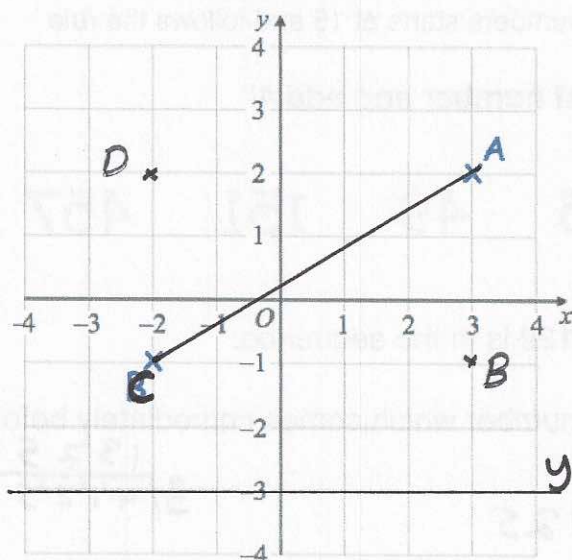
(a) Write down the coordinates of the point B

(.....-2....... , ...-1......)

(1)

ABCD is a rectangle.

(b) Plot the points C and D on the grid.

(1)

(c) On the grid, draw the line with equation $y = -3$

(1)

8. The area of a football pitch is 6,040m².
A hockey pitch is 91 metres long and 37 metres wide.

Work out how much larger the area of the football pitch is than the area of the hockey pitch.

```
x  90    1        2700
30 2700  30        630
7  630   7          30
                     7
                  ─────
                   3367
```

```
      5 10 3
    6 0 4 0
  -   3 3 6 7
  ─────────
    2 6 7 3
```

..........2673.......... m²

(4)

9. Using   3,068 ÷ 26 = 118

Write down the answer to   3,068 ÷ 52

$$118 \div 2 =$$

..........59..........

(1)

10. The number of passengers on 10 buses was recorded.
The stem and leaf diagram shows this information.

Key: 1|4 means 14 passengers

```
0 | 7 9
1 | 4 5 6|8 8
2 | 1 3
3 | 0
```
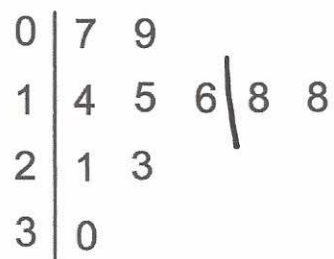
(a) Work out the median.

.......17.......
(1)

A bus is selected at random.

(b) What is the probability the bus has more than 20 passengers?

$\frac{3}{10}$
(1)

11. 465 fans want to go to a rugby match.
    Each bus holds 50 fans.

    (a) Work out the number of buses needed.

    9 buses = 450 fans
    10 buses = 500 fans

    _____10_____
    (2)

    11 fans decide not to go to the match.

    (b) How does this affect the number of buses needed?

    465 - 11 = 454, so it doesn't affect the number
    of buses as 9 still wouldn't be enough
    (1)

12. 150 students visit a school canteen.

    Some students have packed lunches.
    Some students have a cooked lunch.

    56 out of the 89 students who have packed lunch are female.
    There are 72 boys.

    Work out how many females have a cooked lunch.

	packed lunch	cooked lunch	total
Male			72
female	56	22	78
total	89		150

    150 - 72 = 78
    78 - 56 = 22

    _____22_____
    (3)

13. The volume of a cube is 125cm³

Work out the surface area of the cube.

each side is 5cm, since $5^3 = 125$

$S.A. = 6 \times 5^2 = 6 \times 120$

..........150.......cm²

(3)

14.
$$\frac{13}{16}, \frac{3}{4}, \frac{5}{8}, \frac{11}{16}$$

Write these fractions in order, starting with the smallest.

$\frac{3}{4} = \frac{12}{16}$

$\frac{5}{8} = \frac{10}{16}$

$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$
smallest			largest

(3)

15. 1,935 people visit a library during one week.
    The ratio children : adults is 1 : 4
    How many more adults than children visited the library?

$$1+4=5$$

$$1935 \div 5 = 387$$

$$4 \times 387 = 1548$$

$$\begin{array}{r} 1\overset{4}{5}\overset{1}{4}8 \\ -\ 387 \\ \hline 1161 \end{array}$$

$$\begin{array}{r} 3\ 8\ 7 \\ 5\overline{\smash{\big)}1\,9^4\,3^3\,5} \end{array}$$

4	300	80	7
	1200	320	28

$$\begin{array}{r} 1200 \\ 320 \\ 28 \\ \hline 5148 \end{array}$$

........**1161**........

(3)

16. Candles normally cost £6 each.

    Two websites have special offers

Corbettmaths Candles

Buy 3 get 1 free

Candles'R'us

20% off

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

Corbettmaths:
4 cost 3 × £6 = £18
28 cost 18×7 = £126
+ 2 more   = £12
                        —————
              £138

30 × 6 = £180
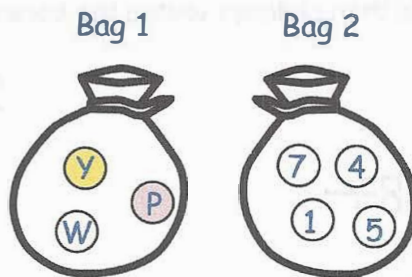20% = 18 × 2 = £36
180 - 36 = £144

she should use Corbettmaths
(obviously!)

(4)

17. Two bags, 1 and 2, each contain equal size counters.

Bag 1   Bag 2

Bag 1 contains a pink counter, yellow counter and white counter
Bag 2 contains counters labelled 1, 4, 5 and 7.

A counter is drawn at random from bag 1 and a counter is drawn at random from bag 2.

If the counter from bag 1 is pink, the number on the counter from bag 2 is increased by 1

If the counter from bag 1 is yellow, the number on the counter from bag 2 is decreased by 5

If the counter from bag 1 is white, the number is halved.

Find the probability of scoring a number below 3

	1	4	5	7
Y	-4	-1	0	2
P	2	5	6	8
W	0.5	2	2.5	3.5

$^8/_{12} = {}^2/_3$

(4)

18. A farmer keeps cows, pigs and sheep on his farm.
    The ratio of cows to pigs to sheep on the farm is 2:7:16 $2 + 7 + 16 = 25$

    Work out the percentage of the animals that are sheep.

    the fraction of sheep = $\frac{16}{25} = \frac{64}{100}$

    64% ....
                                                    (3)

19. Donna uses this recipe for Chilli Con Carne.

    # Serves 6 people

    ### 1 kilogram of mince
    ### 400 grams of tomatoes
    ### 3 chillies
    ### 600 grams of kidney beans

    Donna is going to use this recipe to make Chilli Con Carne for 15 people.

    Work out how many grams of mince she needs.

    ½ kg mince for 3 people
        × 5

    2½ kg for 15 people

    2500 ......g
                                                    (2)

20. (a) Write five million in standard form.

5×10^6

(1)

(b) A calculator displays a number in standard form.

Write the number as an ordinary number.

0.000081

(1)

21. Round 45.2807 to two significant figures

45

(1)

22.   (a)   Work out $1\dfrac{2}{9} \div \dfrac{3}{4}$

$^{11}/_9 \times {}^4/_3 = {}^{44}/_{27}$

$\dfrac{44}{27}$ ....

(2)

(b)   Write down the value of 6^0

1 ....

(1)

(c)   Write down the value of 5^{-2}

$\dfrac{1}{25}$ ....

(1)

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23.   Write 120 as a product of its prime factors.
Give your answer in index form.

120
10   12
⑤ ②   ②   6
②   ③
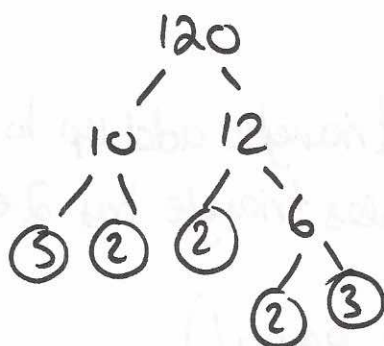
$2 \times 2 \times 2 \times 3 \times 5$

$2^3 \times 3 \times 5$ ....

(2)

24. Rebecca is x years old.
    Mary is 8 years older than Rebecca.
    Jill is three times older than Mary.
    The sum of their ages is 67.

    Work out Mary's age.

$R: x$

$M: x + 8$

$J: 3x + 24$

$5x + 32 = 67$

$5x = 35$

$x = 7$

Mary is $x + 8 =$

...........15...........

(3)

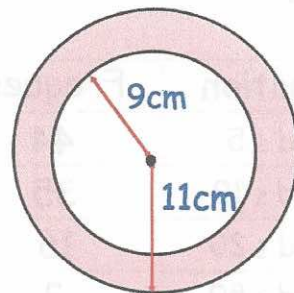25.
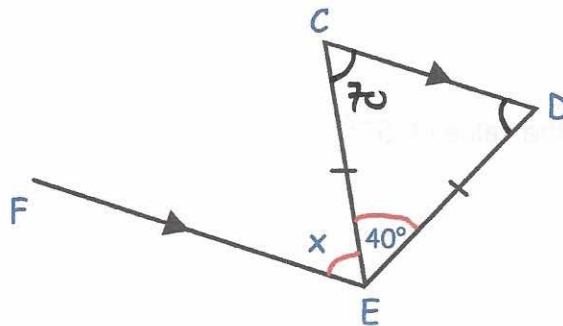
EF and CD are parallel straight lines.
CE = DE
Angle CED = 40°

Find the size of angle CEF
Give a reason for each stage of your working.

$E\hat{C}D = \dfrac{180 - 40}{2} = 70°$ (angles in a triangle add up to 180,

AND an isosceles triangle has 2 equal angles)

$x = 70°$ (alternative angles are equal)

(3)

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26.

Work out the shaded area.
Give your answer in terms of π

large circle area = $\pi \times 11^2 = 121\pi$

small circle area = $\pi \times 9^2 = 81\pi$ —

$$\frac{}{40\pi}$$

40π

........................cm²

(4)

27. Sally is raising money for charity for a fun run.
The table below has been given to her from the website.

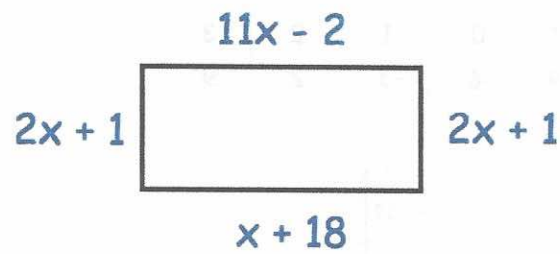| Donation	Frequency	midpoint	fx
$0 < d \leq 5$	30	2.5	75
$5 < d \leq 10$	40	7.5	300
$10 < d \leq 20$	15	15	225
$20 < d \leq 50$	11	35	385
$50 < d \leq 100$	4	75	+ 300
	100		1285

Sally says the average donation is £10.
By calculating the estimated mean, decide if you agree with Sally.

$$1285 \div 100 = £12.85$$

No, Sally has underestimated. The mean donation was £12.85, which is greater
than the £10

(4)

28. Here is a rectangle

$$11x - 2$$

$$2x + 1 \quad \boxed{} \quad 2x + 1$$

$$x + 18$$

All measurements are in centimetres.

Work out the area of the rectangle

$$11x - 2 = x + 18$$

$$10x = 20$$

$$x = 2 \qquad area = 20 \times 5 =$$
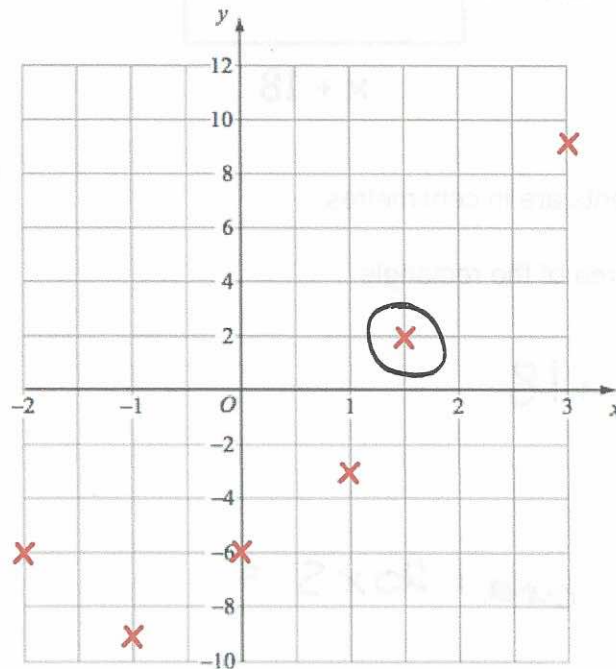
............100............cm²

(5)

29. Max is drawing the graph of $y = x^2 + 2x - 6$

x	-2	-1	0	1	2	3
y	-6	-9	-6	-3	2	9

Write down one thing that is wrong with Max's graph.

The point circled should be at $(2,2)$ rather
than $(1.5, 2)$

(2)

30. The population of an island has decreased by 40% over 50 years.
The population in 2018 was 360

Work out the population of the island in 1968.

Decreased by 40% means 60% left

$\therefore$ 360 = 60% of original
60 = 10%
$\therefore$ 600 = 100%

600
....
(3)