## Foundation Paper 12003

Created by
Graduate Bsc (Hons) MathsSci (Open) GIMA
1)a. Given $17.9+5.2$

$$
\begin{array}{r}
17.9 \\
+5.2 \\
\hline \frac{23.1}{1}
\end{array}
$$

b. Given $3.21 \times 7$

$$
\begin{array}{r}
3.21 \\
\times \quad 7 \\
\hline 22.47 \\
\hline 1
\end{array}
$$

c. $58.4 \div 10$

Simply move point 1 place to the left.

$$
5.84
$$

2. Given $20 \%$ of $£ 340$

Step 1 : Convert $20 \%$ to a fraction $\frac{20}{100}=\frac{1}{5}$

Step 2 : Write $£$ 's to 2 decimal places

$$
\frac{1}{5} \text { of } £ 340.00
$$

$$
5 \longdiv { 3 ^ { 3 } 4 ^ { 4 } 0 . 0 0 } = £ 6 8 . 0 0 \text { or } £ 68
$$

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3. Given the film start at 8.00 to 9.00 and then 9.25 to 11.10 we can work out the time the film last altogether:
$8.00 \rightarrow 9.00(1 \mathrm{hr})$
$9.25 \rightarrow 10.00$ ( 35 mins )
$10.00 \rightarrow 11.00(1 \mathrm{hr})$
$11.10 \rightarrow 11.10$ ( 10 mins )

Total time is 2 hrs 45 mins
4.a Given the speedometer display the speed is (reading from display) 85 mph .
b. If a train travels for 3 hours at the speed in part (a) above. Then the distance travelled will be:

Distance $=$ speed $\times$ time

85
$\times 3$
255
Distance travelled is 255 miles
1

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5.a Given the table of cities and their temperatures:

| Paris | Madrid | Montreal | Moscow | New York |
| :---: | :---: | :---: | :---: | :---: |
| 4 | 9 | -6 | -2 | 0 |

The city with the lowest temperature is Montreal.
5. b When the temperature drops by 3 degrees in Moscow the new temperature will be:

$$
-2-3=-5 \text { degrees }
$$

6. If Colin's gross pay is $£ 1980$ and his deductions are $£ 509$. Then his net pay will be:

$$
\begin{array}{r}
19^{7} 8^{1} 0 \\
-\quad 509 \\
\hline £ 1471
\end{array}
$$

7a. Given the rule we can complete the number cells.

| 7 | 11 | 18 | 29 |
| :--- | :--- | :--- | :--- |

b.

| 5 | 8 | 13 | 21 |
| :--- | :--- | :--- | :--- |

c.

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| 1 | 9 | 10 | 19 |
| :--- | :--- | :--- | :--- |

8. Given the table of bills.

|  | Amount |
| :---: | :---: |
| Spring | $£ 68$ |
| Summer | $£ 50$ |
| Autumn | $£ 73$ |
| Winter |  |
| Total | $£ 336$ |

To calculate the winter bill we add up the Spring, Summer and Autumn bills and take this total away from the total bill.

$$
\begin{array}{r}
£ 68 \\
£ 50 \\
+£ 73 \\
\hline £ 191 \\
\hline 11
\end{array}
$$

$£^{2} 3^{1} 36$
-£191 Winter bill is $£ 145$
b. The mean amount for the bills is:

Add up the total for all the bills $£ 336$
Divide by the number of bills
$4 \longdiv { 3 4 6 }$ The mean bill is $£ 84$

## Foundation Paper 22003

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1. Given the acrobat picture.

The size of the shaded angle is


$$
180^{\circ}-73^{\circ}=107^{\circ}
$$

2. Using the table to complete the bar chart we have:

| Favourite Crisps flavour | Number of people |
| :---: | :---: |
| Ready Salted | 12 |
| Cheese \& Onion | 9 |
| Beef | 2 |
| Salt \& Vinegar | 14 |
| Chicken | 5 |



## Foundation Paper 22003

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3. (a) Given the candle holder design diagram we can complete the table by adding on 4 each time.

2. Part of rule is 4 L
$\infty$
3. Correction factor, so that the rule works is, add on 2

Full rule is: $S=3 L+2^{\circ}$
4. Given the strips can have the combination of:

- A round neck or a V-neck
- Long sleeve or short sleeve
- A plain body or striped body

5 other possible combinations are: (there are more!)

| Neck | Sleeves | Body |
| :---: | :---: | :---: |
| V | Short | Striped |
| V | Short | Plain |
| V | Long | Striped |
| V | Long | Plain |
| R | Short | Striped |
| R | Short | Plain |

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5. Enlarging the diagram so it is twice as long we have:

6. Give the plan of the school hall.

(a) The length of the hall on the plan is 8.6 cm .
(b) Given the scale is $1 \mathrm{~cm}=5 \mathrm{~m}$. the actual length of the hall is

$$
\begin{array}{r}
8.6 \\
\times 5 \\
\hline \frac{43.0}{3}
\end{array} \text { length is } 43 \mathrm{~m}
$$

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6. (c) Measuring breadth on the plan we get: 6 cm

Actual breadth is : $\quad 6 \times 5=30 \mathrm{~m}$

Therefore area is:

$$
\begin{aligned}
\text { Area } & =\text { length } \times \text { breadth } \\
& =43 \times 30 \\
& =1290 \mathrm{~m}^{2}
\end{aligned}
$$

7. Given the jobs list and times we can complete the table as follows:

| 9 am |  | 10 am | 11 am | noon | 2 pm |  | 4 pm |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sam | Job 3 | Job 3 | Job 4 | Lunch | Job 2 | Job 5 | Job 5 | Job 5 |
| Jo | Job 3 | Job 3 | Job 1 | Job 1 | Lunch | Job 5 | Job 5 | Job 5 |

8. Given the diagram we can work out the volume of the cuboid.

Volume $=$ length $\times$ breadth $\times$ height
Volume $=8 \times 6 \times 16$
Volume $=768 \mathrm{~cm}^{3}$


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9.

(a) Given that the scales are balanced and there are 6 identical small parcels on one side and a large parcel weighing 1.8 kg on the other.

Each small parcel must weigh:
$1.8 \mathrm{~kg}=1800 \mathrm{~g}$
$6 \longdiv { 3 0 0 }$ each parcel is 300 g or 0.3 kg
(b)


Diagram 1


Diagram 2

From the first diagram, since scales are balanced then parcel $C$ must be the heaviest.

From the second diagram, see can see that parcel $A$ is lower than parcel $B$ therefore parcel $A$ is heavier than parcel $B$.

Heaviest parcel $C$.
Next parcel B.
Lightest parcel $A$.

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10. Given there is $£ 394$ in the bank and the interest is $7 \%$ per year. Then in one year she will receive in interest:
$\frac{7}{100} \times £ 394=£ 27.58$

OR
$1 \%$ of $£ 394=£ 394 \div 100=£ 3.94$
$7 \%$ of $£ 394=7 \times £ 3.94=£ 27.58$
11. Given the table:

| Daytime Rate 8am-6pm Mon-Fri | 3.5p per minute |
| :---: | :---: |
| Cheap Rate (all other times) | 1p per minute |

(a) The cost between 4.30pm and 5.30pm is:

Difference in time is 1 hour
1 hour $=60 \mathrm{mins}$

Total cost $=3.5 p \times 60$
$=3.5 \times 10 \times 6$
$=35 \times 6$

35
$\frac{\times 6}{\frac{210}{3}}$ equals 210 p or $£ 2.10$

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11. (b) Given the Gold Card cost £14.99 for unlimited use.

Cost of 30 hours at cheap rate is:

30 hours $=30 \times 60=1800$ minutes

Cost of 1800 minutes at 1 p is 1800 p or $£ 18.00$

Jamie saved $£ 18.00-£ 14.99=£ 3.01$ using the Gold Card
12. Given Freshdent usually contains 240 ml .

If it contains a $\frac{1}{3}$ extra it will contain:
$3 \longdiv { 2 4 0 } \quad 2 4 0 + 8 0 = 3 2 0 \mathrm { ml }$
13. Given the rule:

Cost $=£ 25+$ (number of days $\times £ 14.50$ )
14.50
(a) Cost of hiring a car for 6 days will be:

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13. (b) Given he has $£ 300$ to spend on car hire, then he will be able hire it for:
$£ 300-£ 25=£ 275 \quad £ 275 \div 14.50=18.96$

He will be able to hire car for 18 days

