

Foundation Paper 2 2004

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1. The shaded angle has a value of:

Angles around a point add up to 360°

$$360^\circ - 110^\circ - 150^\circ = 100^\circ$$

2. Given 3 coins tossed in the air, another 5 possible results.
Best way of doing this question is doing combinations in order.

1p	5p	20p
Head	Head	Tail
Head	Tail	Head
Head	Head	Head
Tail	Tail	Tail
Tail	Head	Tail
Tail	Tail	Head

3. (a) Measuring the width of the drawers the answer is 5.5 cm

- (b) Given that the scale is : 1 cm : 15 cm

The actual width of the drawer is

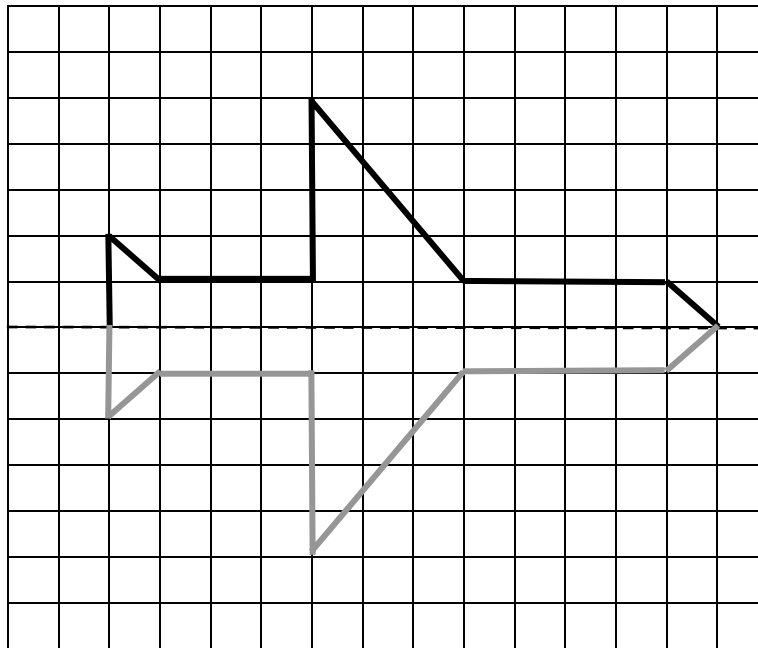
$$\begin{array}{r}
 15 \\
 \times 5.5 \\
 \hline
 75 \\
 750 \\
 \hline
 82.5 \\
 1
 \end{array}$$

82.5 cm

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4. Completing the diagram we have:



5. Completing the Tally table we have:

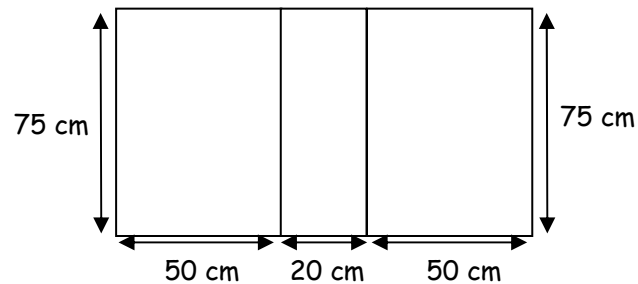
Age (years)	Tally	Frequency
18	1,1,1	3
19	1,1,1,1,1	5
20	1	1
21	1,1	2
22		0
23	1	1

The mode is the most frequency number that occurs which is 19.

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6. Given the dimensions of the rectangular table the area is:



$$\begin{aligned}
 \text{Area} &= l \times b + l \times b + l \times b \\
 &= 50 \times 75 + 20 \times 75 + 50 \times 75 \\
 &= 3750 + 1500 + 3750 \\
 &= 9000 \text{ cm}^2
 \end{aligned}$$

7. Given train goes round track in 10 seconds. For it to go round 25 times it will take:

$$25 \times 10 = 250 \text{ seconds}$$

There are 60 seconds in 1 minute.

So in minutes and seconds it will be 4 minutes and 10seconds.

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8. (a) Completing the table we get:

Number of posts	2	3	4	5	6	7		11
Length of wire	2	4	6	8	10	12		20

- (b) Step 1: Write down the difference 2.

Step 2: Write down part of the rule $L = 2P$.

Step 3: Adjustment Subtract 2.

The rule is $L = 2P - 2$

9. (a) Since we are told that the big picture is $1\frac{1}{2}$ times the small picture we have:

$$\text{length is } 1.5 \times 36 = 36 + 18 = 54 \text{ cm}$$

$$\text{breadth is } 1.5 \times 27 = 27 + 13.5 = 40.5 \text{ cm}$$

- (b) The length of the postcard picture is reduced by a factor of 3.

Hence the breadth will also be reduced by a factor of 3.

$$\text{breadth} = 27 \div 3 = 9 \text{ cm}$$

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10. (a) Given the grid. We can put 'Alan' in C6.

9										
8			Bill							
7	Lucy						Kim			
6			Alan							
5					Jim					
4							Pat			
3										
2		Jim								
1										
	A	B	C	D	E	F	G	H	I	J

- (b) There are 90 boxes which cost £0.20 each (20p each)

Total money from boxes is: $90 \times 0.20 = \text{£}18.00$

Money paid out is $4 \times \text{£}2.00 = \text{£}8.00$

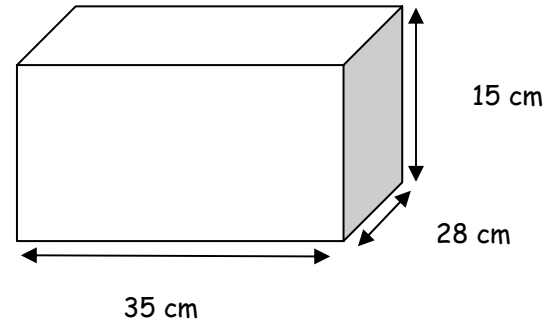
Profit made from the Grid Game is $\text{£}18.00 - \text{£}4.00 = \text{£}14.00$

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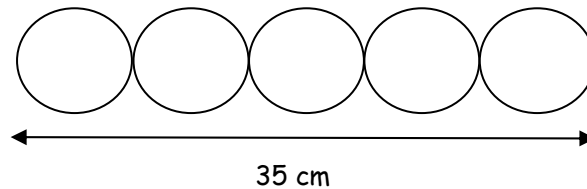
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11. (a) The volume is given by:

$$\begin{aligned} \text{Volume} &= \text{length} \times \text{breadth} \times \text{height} \\ &= 35 \times 28 \times 15 \\ &= 14700 \text{ cm}^3 \end{aligned}$$



- (b) Given diagram:



Diameter of each identical tin is: $35 \div 5 = 7 \text{ cm}$

Radius is $\frac{1}{2}$ the diameter

Hence radius of tin is 3.5 cm

- (c) If tins are 5 cm high then
we can stack $15 \div 5 = 3$ tins high.

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12. To calculate 15% more than £129 000 we do the following:

$$1.15 \times \text{£}129000 = \text{£}148350$$

Or

$$10\% \text{ of } \text{£}129\,000 = \text{£}12\,900$$

$$5\% \text{ of } \text{£}129\,000 = \text{£}6\,450$$

$$15\% \text{ of } \text{£}129\,000 = \text{£}19\,350$$

$$\text{Total is } \text{£}129\,000 + \text{£}19\,350 = \text{£}148\,350$$

13. Given the length of the gaps are equal we have

$$2.1 \text{ m} = 210 \text{ cm}$$

$$75\text{cm} + 75\text{cm} = 150 \text{ cm}$$

$$210\text{cm} - 150\text{cm} = 60 \text{ cm}$$

3 identical gaps therefore each gap is

$$60 \div 3 = 20 \text{ cm}$$

