1) $9 \times 4=36$ or $4 \times 9=363 \times 4=12$ or $4 \times 3=126 \times 4=24$ or $4 \times 6=24$
2) There are 7 columns of 4 cubes.

$$
7 \times 4=28 \quad 4 \times 7=28
$$

3) 32 , because $8 \times 4=32$
4) Gina is correct. If each child brings in four tubes, they will have 16 in total, because $4 \times 4=16$. To have 20 , they would each need to bring in five tubes because $5 \times 4=20$.
5) 

| $12 \times 4$ | Yes - there 4 lots of 12 cm. |
| :--- | :--- |
| $[12 \times 12+12]$ <br> $+[1 \times 4]$ | No - the first row shows 3 lots of 12 , one more lot of 12 should be added not one lot of four. |
| $12 \times 2 \times 2 \times 2 \times 2$ | No - because multiplying by four is the same as multiplying by two and two again not by <br> two four times. |
| $\{10 \times 4]+\{2 \times 4]$ | Yes - 12 has been partitioned into 10 and 2. Ten lots of four added to two lots of four would <br> equal twelve lots of 4. |

1) Continue Gina's pattern. What do you notice? Halving multiples of 4 always gives an even number.
b)

2) 

| $4 \mathrm{~cm}+8 \mathrm{~cm}=12 \mathrm{~cm}$ | $4 \mathrm{~cm}+24 \mathrm{~cm}=28 \mathrm{~cm}$ | $4 \mathrm{~cm}+40 \mathrm{~cm}=44 \mathrm{~cm}$ |
| :--- | :--- | :--- |
| $4 \mathrm{~cm}+12 \mathrm{~cm}=16 \mathrm{~cm}$ | $4 \mathrm{~cm}+28 \mathrm{~cm}=32 \mathrm{~cm}$ | $4 \mathrm{~cm}+44 \mathrm{~cm}=48 \mathrm{~cm}$ |
| $4 \mathrm{~cm}+16 \mathrm{~cm}=20 \mathrm{~cm}$ | $4 \mathrm{~cm}+32 \mathrm{~cm}=36 \mathrm{~cm}$ |  |
| $4 \mathrm{~cm}+20 \mathrm{~cm}=24 \mathrm{~cm}$ | $4 \mathrm{~cm}+36 \mathrm{~cm}=40 \mathrm{~cm}$ |  |

