

1. Marla buys some bags of buttons.

There are 19 buttons or 20 buttons or 21 buttons or 22 buttons in each bag.

The table gives some information about the number of buttons in each bag.

x	f	fx	
Number of buttons	Frequency	$(f \times x)$ = Number of buttons	
19	5 (1)	a	$19 \times ? = a$
20	7	140	20×7
21	3	63	21×3
22	1	22 (1)	22×1
		320	

The total number of buttons is 320

Complete the table. Finding a :
 $a = 320 - 140 - 63 - 22 = a$
 $a = 95$

The fx column must sum to the total number of buttons (320)

Calculating the missing frequency:

$$fx = a$$

$$19f = 95$$

$$f = \frac{95}{19} = 5$$

(Total for Question is 3 marks)

2. The table gives information about the number of points scored by each of 16 students in a game.

Number of points	Frequency
0	1
1	3
2	5
3	4
4	3

Tina worked out the median of the number of points scored to be 5

- (a) Explain why it is not possible for the median to be 5

The number of points only goes up to 4. ✓

(1)

Tina also worked out the total number of points scored by the 16 students in the game. Here is her working.

$$(0 \times 1) + (1 \times 3) + (2 \times 5) + (3 \times 4) + (4 \times 3) = 1 + 3 + 10 + 12 + 12 = 38$$

Tina made a mistake in her working to find the total number of points scored.

- (b) Describe the mistake that Tina made.

$0 \times 1 = 0$, not 1 as Tina has stated. ✓

(1)

(Total for Question is 2 marks)

3. The incomplete table gives some information about the lengths of the planks of wood in Ben's workshop.

Length of plank (metres)	Number of planks	length \times number Total length
3	5	$5 \times 3 = 15\text{m}$
2.5	8	$2.5 \times 8 = 20\text{m}$
2	x	$2x = 2xm$
1.5	14	$1.5 \times 14 = 21\text{m}$
1	10	$1 \times 10 = 10\text{m}$
		$66\text{m} + 2xm$ (1)

add totals

The total length of these planks is 92 metres.

Work out the number of planks of length 2 metres in Ben's workshop.

$\downarrow x$

$$\begin{array}{r} 66 + 2x = 92 \\ -66 \quad -66 \\ \hline 2x = 26 \\ \underline{x} \quad \underline{2} \quad (1) \\ x = 13 \end{array}$$

(1)
13 2m planks