SET-3

1 Mario, Franco and Gina share 153 badges in the ratio 2 : 3 : 4

Work out how many badges Mario gets.

_____badges   [2]

Mark Scheme:

Part	Mark	Answer	Further Information
	2	34 (badges)	Award 1 mark for sight of either of these: • 153 / 9 (= 17) • $\frac{2}{9}$ (× 153)
Total	2		

2 This table gives information about the parliaments of New Zealand and of Spain in 2014

Country	Number of people in parliament	Number of men	Number of women
New Zealand	**121**	82	39
Spain	350	224	126

Draw a ring around the country that had a greater proportion of women in its parliament.

New Zealand   Spain

Show how you worked out your answer.

[2]

Mark Scheme:

Answer	Marks	Further Information
Spain circled **and** 0.32 oe and 0.36 oe seen a valid argument involving percentages or ratios or fractions e.g. NZ women = 39 ÷ 121 = 0.32 or better and Spain = 126 ÷ 350 = 0.36 or NZ men = 82 ÷ 121 = 0.68 or better and Spain = 224 ÷ 350 = 0.64 or NZ ratio of men to women = 2.1 : 1 and Spain 1.8 : 1 or NZ has 2.1 men for every woman and Spain 1.8 or NZ 0.48 women to each man and in Spain 0.56 or NZ has more than 2 men per woman and Spain has less than 2 men per woman or 13650:15246 oe or any equivalent statement.	2	2 marks are awarded for a clear explanation and identification of Spain. Ensure consistent use of columns e.g. $\dfrac{82}{121}$ and $\dfrac{224}{350}$ $\begin{array}{lcc} & \text{Men} & \text{Women} \\ \text{NZ} & \dfrac{28700}{42350} & \dfrac{13650}{42350} \\ \text{Spain} & \dfrac{27104}{42350} & \dfrac{15246}{42350} \end{array}$ NZ = 121 × 3 = 363 and 39 × 3 = 117 Spain = 350 and 126
calculating any one of • 0.32 or 32% • 0.36 or 36% • 0.68 or 68% • 0.64 or 64% • 2.1 or 1.8 or 0.48 or 0.56 • 13650 or 15246 seen	M1	

3 Shirts are made from a mix of cotton and polyester.
The ratio of cotton to polyester in two shirts is

	cotton : polyester
Shirt A	13 : 7
Shirt B	3 : 2

By writing each ratio in the form $c : 1$, find which shirt contains the higher proportion of cotton.

Shirt _____ has the higher proportion of cotton.   [2]

Mark Scheme:

Shirt A **and** gives correct supporting ratios, e.g. $1.8(57...) : 1$ **and** $1.5 : 1$	**2**	Allow fractions $\frac{13}{7} : 1$ **and** $\frac{3}{2} : 1$ Allow rounded e.g. 1.9:1 **and** 1.5:1
Any of • $1.8(57...)$ or $\frac{13}{7}$ • 1.5 or $\frac{3}{2}$	B1	Allow rounded e.g. 1.9

4 Mike has 450 dollars and spends 360 dollars.
Gabriella has 3600 dollars and spends 2700 dollars.

Tick (✓) to show who spends a greater proportion of their money.

Mike ☐   Gabriella ☐

Show how you worked out your answer.

[2]

Mark Scheme:

Ticks Mike with 2 supporting figures that can be compared, e.g. 75% and 80% oe	**2**	Accept fractions with a common denominator and decimals e.g. $\dfrac{15}{20}$ **and** $\dfrac{16}{20}$, 0.75 **and** 0.8 Other values may be possible, e.g. two ratios with a common value.
360 ÷ 450 **or** 2700 ÷ 3600 **or** 75% **or** 80%	**M1**	Award M1 for one correct value. Accept fractions and decimals.

5 Write the ratio 75 cm : 1.8 m in its simplest form.

.... : .... [2]

Mark Scheme:

5 : 12	**2**	Do **not** accept 5 cm : 12 cm for 2 marks
A correct ratio in the same units.	M1	e.g. 0.75 (m) : 1.8 (m) 75 (cm) : 180 (cm) 25 : 60 5 cm : 12 cm $1 : \dfrac{12}{5}$ oe $\dfrac{5}{12} : 1$ oe