

Topic 3 Percentages and ratio (Pre-TT) [37] MARKSCHEME

1.

$\frac{15}{100} \times 840$		M1
	$100 - 15$	M1
= 126		M1
	$\frac{85}{100} \times 840$	M1
840 - 126 = 714		A1
	714	A1

[3]

2.

Alternative method 1		
6.31 - 3.6(0) or 2.71	M1	
their 2.71 ÷ 3.6(0) (× 100) or 0.752(7) or 0.753	M1dep	
75.2(7) or 75.28 or 75.3	A1	Allow 75 with correct method seen
Alternative method 2		
6.31 ÷ 3.6(0) (× 100) or 1.752(7) or 1.753 or 175.2(7) or 175.3	M1	
1.752(7) - 1 or 1.753 - 1 or 175.2(7) - 100 or 175.3 - 100	M1dep	
75.2(7) or 75.28 or 75.3	A1	Allow 75 with correct method seen

3.

171	<p>P1 for process to find one share</p> <p>P1 for process to find total</p> <p>A1 cao</p>
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4.

Sight of 1.032	B1
4500 × 1.032 to any power > 1	M1
4 years	A1

Must see correct values for 3 years (4945.97) and 4 years (5104.24 or 4945.97 and 158.27) Accuracy can be to nearest pound rounded or truncated. Accept 'nearly 4' or 'between 3 and 4' if 5104.24 seen.

Common misconception.

Year 1 = 4500 etc.. leading to 5 years loses this A mark.

[3]

5.

$$75\% = 180$$

M1

Use of multiplier 0.75 B1

$$(1\% =) 180 \div 75 (=2.4)$$

A1

$$180 \div 0.75 \text{ M1}$$

$$(100\%) = 240$$

A1

[3]

6.

$6 : 5 = 12 : 10$ $2 : 1 = 10 : 5$ $C : S : P = 12 : 10 : 5$ $\frac{10}{27} \times 189$	70	P1 P1 for strategy to start to solve the problem eg $12 : 10$ and $10 : 5$ P1 P1 for process to solve the problem eg $\frac{10}{27} \times 189$ A1 A1 cao
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7.

$\frac{4}{5}$ or 80% seen or used	M1	oe May be implied
$29.4(0) \times 5 \div 4$ or $147 \div 4$ or $29.4(0) \div 4 (\times 5)$ or $7.35 (\times 5)$ or $29.4(0) \div 0.8$	M1	oe
36.75	A1	

8.

128	6 1 AO1.3b 2 AO3.1b 2 AO3.2 1 AO3.3	M2 for $(48 \div 2) \div 3 \times 2$ oe Or M1 for $(48 \div 2) \div 3$ AND A1 for 8 A1 for 16 M1 for 8×16	Alternative method: B4 for $x = 3$ OR M1 for $2(x + 5) + 4(x + 5) = 48$ M1 for correct collection to $ax + b = 48$ oe (FT <i>their</i> equation in x) M1 for $(48 - \text{their } b) \div a$ (FT <i>their</i> $ax + b = 48$) After 0 scored, SC1 for use of two other variables in ratio 1 : 2 AND B1FT for $2(\text{their } x + 5)(\text{their } x + 5)$ evaluated (FT <i>their</i> solution for x)
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9.

100(%) – 14(%) or 86(%) or 1 – 0.14 or 0.86	M1	Implied by 87 139(.5)
$101\,325 \times 0.86^4$	A1	oe eg $101\,325 \times 0.86$ or 87 139(.5) and their $87\,139(.5) \times 0.86$ or 74 939(.97) and their $74\,939(.97) \times 0.86$ or 64 448(.3742) and their $64\,448(.3742) \times 0.86$
55 425(...)	A1	May be implied by 55 000 or 55 400 or 55 430 or 55 426
55 000	B1ft	ft their answer rounded to 2sf

10.

(a)	(Account) A (by) 103[p]	5 3 AO1.3b 1 AO3.1d 1 AO3.3	B2 for 10 927.27 and B2 for 10 926.24 or B1 for 10 400 or 10 712 If zero scored M1 for 1.03^3 oe used M1 for 1.04, 1.03 and 1.02 used oe
(b)	He may not want to leave it there for 3 years	1 1 AO2.3a	Accept any valid reason