



Percentages

Mark Scheme 5

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Percentages
Booklet	Mark Scheme 5

Time Allowed: 81 minutes

Score: /67

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

1 (a)	(\$ 450)	B2	M1 for $650 \div (9 + 4) \times 9$ ($\div 14$ does not imply $9 + 4$)
(b) (i)	(\$ 120)	B2	for 0.8×150 o.e.
(ii)	(\$ 80 ft)	B2 ft	M1 for $(150 - \text{their}(\mathbf{b})(\mathbf{i})) \div 0.375$ o.e. only if +ve. After M0, SC1 for answer 320
(c)	(\$ 441)	B2	for 400×1.05^2 o.e. or for answer 41
(ii)	$\frac{1}{2}$ their (i) $- 400) \div 400 \times 100$ o. 5.125 or 5.13 or 5.12 c.a.o. www3	M2 A1	If use Simple Int in (i), M0, M0 in this part i.e. a full explicit method for r If M0 , M1 for $\frac{400 \times r \times 2}{100} = \text{their}(\mathbf{i}) - 400$ or their (i) $\div 400 \times 100$ then $- 100$ or $\frac{\text{their}(\mathbf{i}) - 400}{400} \times 100$ (s.o.i. by 10.25) If still M0, SC1 for answers 55.125 or 55.12 or 55.13 or 55.1 or 0.05125 or 0.0512 or 0.0513

[11]

2	20		B1 $\frac{370 + x}{500 + x} = \frac{3}{4}$ oe fraction, decimal, percentage M1 two moves completed correctly M1 two more correct moves completed
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3 (a)	$800 \div (7 + 5 + 4)$ their 50 \times any one of 7, 5 or 4 350, 250, 200	M1 M1 A1 B1	Implied by 50 Dep www 3 In order or correctly matched May be implied in next step
(b)	100 or 250 $\frac{\text{their } 250 \times 5 \times 2}{100}$ seen 275 cao	M1 A1	could be 100, 350 etc. not 2/7 or 5/7 www 3
(c)	$0.8 \times$ their 250 in (a) oe 200	M1 A1ft	www 2 ft acc to nearest cent if approp.
(d)	275 or their (b) :200 or their (c) : 100 11 : 8 : 4 or 2.75 : 2 : 1 cao	M1 A1	www 2 In order or correctly matched
(e)	100×1.05^2 110.25 cao	M1 A1	After M0 allow SC1 for 10.25 final answer
12			

4	(a)	6000	2*	M1 $7200 \div 1.2$ oe
	(b)	12.5	2*	M1 $(8100 - 7200) \div 7200$ oe

5	\$10	2*	M1 $\frac{800 \times 5 \times 3}{12 \times 100}$
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6	(a)	20%	2*	M1 for $\frac{62000}{310000} \times 100$
	(b)	400%	2*	M1 for $\frac{248000}{62000} \times 100$

7	3.23	2*	M1 $\frac{\text{figs 4}}{\text{figs 124}}$ or $\frac{\text{figs 128} - \text{figs 124}}{\text{figs 124}}$ Note 3.13 is M0
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8(a)(i)	$\frac{60}{100} \times 120$		M1	Implied by 72 seen and not spoilt.
(ii)	(\$) 132 $\frac{\text{their(a)(i)} \times 100}{120}$	c.	A1 M1	ww2 $\sqrt{\text{f}} \frac{\text{their (a)(i)} \times 100}{120}$
	110(%) Final answer, but may be explained using 10.		A1 $\sqrt{\quad}$	Sc1 for 10 or their extra % or $\frac{\text{their(a)(i)} - 120}{x100}$
(b)	$\frac{159.10}{\text{their 86}} (x100)$	o.	M1	120 Allow any statement that equates 159.10 with 86%
(c)	(\$) 185 $\frac{156 \times 52}{169}$	c.a. o.	A1 M1	provided it is not contradicted later. ww2
(d)(i)	48(cm) $\frac{11}{20} \times 36$	c.a. o.	A1 M1	Alt. Method $\frac{156}{156+169} = \frac{x}{x+52}$ o.e. ww2 Method not spoilt by also doing $\frac{9}{20} \times 36$
(ii)	19.8(km) $36 \times \frac{23}{2}$ 414(km)	c.a. o. c.a.o.	A1 M1 A1	ww2 Condone 19.8:16.2 16.2:19.8 is M1A0 1

9	66.7	2	M1 for $\frac{2.4}{3.6} \times 100$ o.
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10 (a)	50.3	2	M1 for $\frac{(7087000 - 4714900)}{4714900}$ o.e. must be recognisable complete correct method	4
(b)	4710000 or 4.71×10^6	1		
(ii)	7.087×10^6	1	accept 7.09×10^6 , ignore superfluous zeros	

11	25.8	2*	M1 for $\frac{16}{62} \times 100$ or $100 - \frac{46}{62} \times 100$
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12(a)(i)	14 44	B1	
(ii)	$\frac{6(00...)}{33}$ or $\frac{1(0...)}{0.55}$ or Fig: 19... 18.2(km/h) • www.	M1 A1	Accept 18.18.., 18 ² / ₁₁ . <u>Units wrong, A0</u> www2
(iii) (Mark Final Answer)	32 <u>min</u> 8.8 <u>sec</u>	B1 (4)	Accept 32.1 min, or 1928.8 sec <u>UNITS ESSENTIAL</u> 32.15 min, 1929 sec 32.147 min, 1930 sec 32.1466 min,
(b)	80×0.95 76	M1 A1 (2)	www2
(c)	Division by 110 or 1.1. 5.60 or 5.6	M1 A1 (2)	www2 Accept <u>560cm</u>