Finance Problems

Mark Scheme 1

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Finance Problems
Booklet	Mark Scheme 1

Time Allowed: **58 minutes**

Score: **/48**

Percentage: **/100**

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Grade Boundaries:

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

1	**(a)**	$\frac{8}{8+15+9}\times 640$ oe	**1**	With no errors seen
	(b)	300 and 180	**2**	**B1** for each or **SC1** for answers reversed
	(c)	10 nfww	**2**	**M1** for 160 ÷ 15.25 implied by 10.5 or 10.49... nfww
	(d)	$\frac{7}{24}$	**3**	**M1** for $\frac{3}{8}+\frac{1}{3}$ oe **M1dep** on previous **M1** for 1 – *their* $(\frac{3}{8}+\frac{1}{3})$ oe

2	**(a)**	6250	**3**	**M2** for $\frac{6000}{100-4}\times 100$ oe or **M1** for 6000 associated with 96 [%]
	(b)	4441	**3**	**B2** for 4441.1 to 4441.2 or 4440 or **M1** for $\frac{6000}{1.351}$

	(c)	1.58 or 1.581…	**5**	**M1** for $6000\times\left(1+\frac{1.5}{100}\right)^{8}$ oe **A1** for 6758.95……. or 6758.96 to 3 sf or better or 758.95 or 758.96 rounded or truncated to 3 sf and **M2** for $\{their(6000\times 1.015^{8})-6000\}\times\frac{100}{6000\times 8}$ oe or **M1** for $\frac{6000\times r\times 8}{100}$ oe

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3	1597 cao	**4**	**B3** for 1597.39.. or 1597.3[9...] or 1597.4 or 6597 or **B2** for 6597.3[9...] or 6597.4 or **B1** for $5000\left(1+\frac{2}{100}\right)^{14}$ If **B1** scored or **B0** scored and an attempt at compound interest is shown **SC1** for *their* 6597[...] – 5000 evaluated correctly provided answer positive and **SC1** for *their* final answer rounded correctly to nearest $ from their more accurate answer

4	20.6 or 20.58 to 20.59	**3**	**M2** for $\frac{85-67.5}{85}\times 100$ or $\left(1-\frac{67.5}{85}\right)\times 100$ or **M1** for $\frac{85-67.5}{85}$ or $\frac{67.5}{85}\times 100$ If zero scored **SC1** for $\frac{67.5-85}{85}\times 100$

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5	**(a)**	**(i)**	331 or 331.1 to 331.2	**2**	**M1** for $\pi \times 6.2 \times 10.8 + \pi \times 6.2^2$
		(ii)	$\frac{A - \pi r^2}{\pi r}$ oe final answer	**2**	**M1** for correct re-arrangement isolating term in l **M1** for correct division by πr
	(b)	(i)	4.39 or 4.390…	**3**	**M2** for $18 \div \left(\frac{10}{4} + \frac{8}{5}\right)$ or **M1** for $\frac{10}{4}$ or $\frac{8}{5}$
		(ii)	$x + x + 4$ oe	**B1**	Must be seen
			$\frac{x}{5}$ or $\frac{x+4}{10}$	**B1**	Must be seen
			$\frac{x + x + 4}{\frac{x}{5} + \frac{x+4}{10}} = 7$ oe	**M2**	or **M1** for evidence of total distance ÷ *their* total time
			12	**B1**	
	(c)	(i)	16.5[0] final answer	**3**	**M2** for $19.8 \div \left(1 + \frac{20}{100}\right)$ oe or **M1** for evidence of (100 + 20)% associated with 19.8
		(ii)	$\frac{100x}{100 + y}$ final answer	**3**	**B2** for $\frac{x}{1 + \frac{y}{100}}$ or $\frac{x}{1 + 0.01y}$ oe or **B1** for $1 + \frac{y}{100}$ or $100 + y$ or $1 + 0.01y$ seen

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6	198	**4**	**B3** for 197.7…. or answer 198.00 or **M2** for $1800 \times \left(1+\frac{1.5}{100}\right)^{7} - 1800$ or **B2** for answer 1998 or **M1** for $1800 \times \left(1+\frac{1.5}{100}\right)^{7}$ If **B0** then **B1** for seeing their answer in decimal form correctly written to the nearest integer

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