



Exponential Growth & Decay (inc Compound Interest)

Mark Scheme 2

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Exponential Growth & Decay (inc Compound Interest)
Booklet	Mark Scheme 2

Time Allowed: 38 minutes

Score: /31

Percentage: /100

Grade Boundaries:

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

1	(a) (i)	48	2	M1 for $\frac{72}{3}$	
	(ii)	32.4[0]		1	
	(iii)	$\frac{13}{30}$		2	M1 for $\frac{72 - \text{their(ii)} - 8.4}{72}$ oe
	(iv)	24		3	M2 for $\frac{19.2}{0.8}$ oe or M1 for recognising 19.2 is 80%
	(b)	660		3	M2 for $\frac{550 \times 2 \times 10}{100} + 550$ oe or M1 for $\frac{550 \times 2 \times 10}{100}$ oe
(c)	663.9[0]	2	M for 550×1.019^{10} oe		
(d)	1.5[0]	3	M2 for $\sqrt[10]{\frac{638.3[0]}{550}}$ oe or M1 for $550 \times m^{10} = 638.3[0]$		

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 <i>their</i> 6597[...] – 5000 evaluated correctly provided answer positive and SC1 for <i>their</i> final answer rounded correctly to nearest \$ from their more accurate answer
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