

Topic Test 1 Mark Scheme

Growth and decay - Higher

Q	Answer	Mark	Comments																		
1	1.13	B1																			
2	2185.454	B1																			
3	$A = P\left(1 + \frac{r}{100}\right)^n$	B1																			
4	<table border="1"> <thead> <tr> <th>x</th> <th>n</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>3000</td> <td>1</td> <td>3150</td> </tr> <tr> <td>3150</td> <td>2</td> <td>3307.50</td> </tr> <tr> <td>3307.50</td> <td>3</td> <td>3472.88</td> </tr> <tr> <td>3472.88</td> <td>4</td> <td>3646.52</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	x	n	y	3000	1	3150	3150	2	3307.50	3307.50	3	3472.88	3472.88	4	3646.52				B3	B2 3307.50 and 3 and 3472.88 B1 for 3307.50 and 3
x	n	y																			
3000	1	3150																			
3150	2	3307.50																			
3307.50	3	3472.88																			
3472.88	4	3646.52																			
5	1.038 seen	B1																			
	$4000 \times (1.038)^4$ or 4643.54...	M1																			
	643.54	A1																			
6	1.029 seen	B1																			
	$5000 \times (1.029)^3$	M1																			
	5447.74	A1																			

Q	Answer	Mark	Comments
7	10×0.6^n	M1	oe
	Any value calculated for $n > 1$ $n = 2$ gives 3.6 $n = 3$ gives 2.16 $n = 4$ gives 1.296 $n = 5$ gives 0.7776	M1	
	At least 2 values calculated accurately	A1	
	5	A1	
8	Decreases by 3.2%	B1	
9	10000×0.94^n stated or implied or 94% left each day	M1	
	Explanation that calculator used with an iterative process, using Ans \times 0.94 with continually pressing equals or correct calculations seen	M1dep	
	11	A1	