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><tr><th>x</th><th>n</th><th>y</th></tr><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></table>	B3	B2 3307.50 **and** 3 **and** 3472.88 B1 for 3307.50 **and** 3
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	