Question Number	Scheme	Marks
1. (a)	$g(3) = -265, \quad g(4) = 3104$ States change of sign, continuous and hence root in $[3, 4]$	M1 A1 **(2)**
(b)	$x_2 = \sqrt[6]{1000 - 2 \times 3} \quad = 3.1591$ $(\alpha =) 3.1589$	M1 A1 A1 **(3)**
		(5 marks)

Notes

(a)

M1 Attempts the value of g at 3 and 4 with one correct (accept any value for the other as an attempt). Note narrower ranges are possible but must contain the root and lies in [3,4].

A1 Both values correct with reason (Sign change (stated or indicated) and continuous function) and minimal conclusion (root)

(b)

M1 Attempts to substitute $x_1 = 3$ into the formula. Implied by sight of expression, awrt 3.159

A1 awrt 3.1591

A1 $(\alpha =) 3.1589$ cao - must be to 4 d.p. Do not be concerned about the labelling of the root (x or α etc), mark the final answer of (b)(ii). (Note sight of this value implies the M1 even if x_2 is not seen).