

Question Number	Scheme	Marks
7(a)	Missing values -2.59, -1.17, 1.66 (B1B0 one correct; B1B1 all correct)	B1B1 (2)
(b)	All points plotted correctly within half of one square All points joined up in a smooth curve	B1ft B1ft (2)
(c)	$\log_2 7 = x$  $7 = 2^x \quad 2^x - 4 = 3$	M1
	Draw line $y = 3$ or vertical from point on graph where $y = 3$ to $x$ -axis	M1
	$\log_2 7 = 2.8$	A1 (3)
(d)	$2^x = 7 - 3x$  $y = 2^x - 4 = 3 - 3x$	M1A1
	Draw line $y = 3 - 3x$ $x = 1.4$	M1(their line) A1 (4) [11]
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**Notes**

(a)

B1: for one correct value

B1: for all values correct

(b)

B1ft: for all points plotted correctly within half of one square

B1ft: points joined up in a smooth curve

**NOTE Part (c) and (d) must have evidence of their graph being used.**

(c)

M1: for 'undoing' the log and substituting into  $y = 2^x - 4 \Rightarrow y = 7 - 4 = 3$ 

$$\text{OR } y = 2^x - 4 \Rightarrow 2^x = y + 4 \Rightarrow x = \log_2(y + 4)$$

$$\log_2 7 = \log_2(y + 4) \Rightarrow y = 3$$

**Note:** an answer of 2.80.. without working or evidence of a mark or line on their graph is M0M1: for drawing the line  $y = 3$  or vertical from point on graph where  $y = 3$  to  $x$ -axis or some evidence of using their graph from  $y = 3$ .A1: for  $x = 2.8$ 

(d)

M1; for attempting to re-arrange the equation to give  $2^x - 4 = \pm k \pm 3x \quad k \neq 7 \text{ or } 0$ A1: for  $2^x - 4 = 3 - 3x$ M1: for drawing their ' $y = 3 - 3x$ ' (look for intersections at (0, 3) and (1, 0) for the correct line) but it **must** be in the form  $y = \pm k \pm 3x \quad k \neq 7 \text{ or } 0$ A1: for  $x = 1.4$ **Note on Rounding**

Some candidates are giving answers in (c) and (d) to 2 dp. Penalise only once (the first time)

**PROVIDED** the answers given **both** round to 2.8 and 1.4 respectively. If answers given are for example, (c) 2.83 (d) 1.45, then this loses both A marks because part (c) is rounded incorrectly and part (d) rounds to 1.5 which is incorrect.