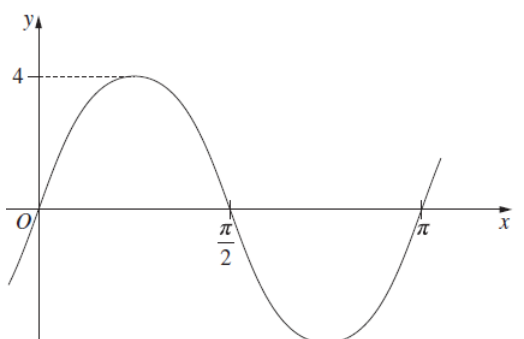
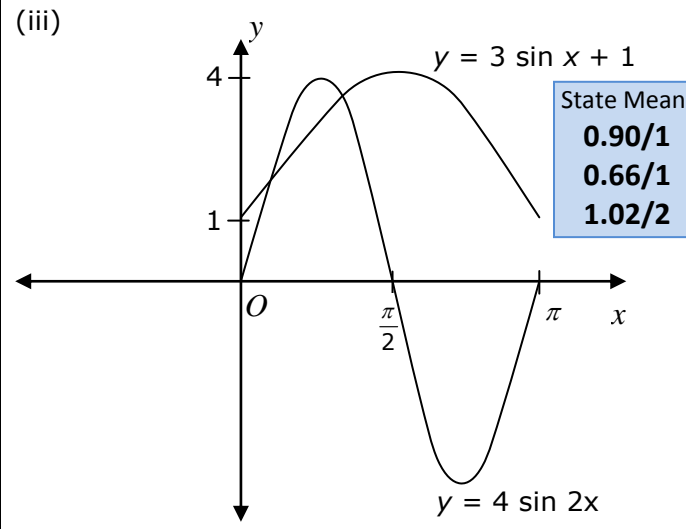


10	8c	<p>The graph shown is $y = A \sin bx$.</p> <p>(i) Write down the value of A. (ii) Find the value of b. (iii) Copy or trace the graph into your writing booklet. On the same set of axes, draw the graph $y = 3 \sin x + 1$, for $0 \leq x \leq \pi$.</p> 	1 1 2
(i)	From the graph, $A = \text{amplitude} = 4$	<p>(ii) From the graph $(\frac{\pi}{4}, 4)$ lies on the graph. Subs into $y = 4 \sin bx$: $4 = 4 \sin \frac{\pi \cdot b}{4}$ $\sin \frac{\pi \cdot b}{4} = 1$ $\frac{\pi \cdot b}{4} = \frac{\pi}{2}$ $b = \frac{\pi}{2} \div \frac{\pi}{4}$ $= 2$</p>	<p>(iii)</p> 

* These solutions have been provided by [projectmaths](#) and are not supplied or endorsed by the Board of Studies

Board of Studies: Notes from the Marking Centre

- (i) Most candidates correctly determined A . A minority determined that $A = 3$, possibly referring to the graph that they were required to draw in (c) (iii).
- (ii) A significant number of candidates correctly determined b . However, the common error in this part was to simply state the period of the graph and not use it to determine the value of b . A number of candidates wrote the answer for (i) as the answer to (ii) and vice-versa.
- (iii) This part was generally well answered, with most candidates scoring at least a mark. Typical errors included: graph drawn with the incorrect period; incorrectly representing the correct period on their graph; lack of symmetry about $y = 1$; the graph drawn with the incorrect amplitude.

Source: http://www.boardofstudies.nsw.edu.au/hsc_exams/