13	11 e	Find $\lim_{x\to 0} \frac{\sin\frac{x}{2}}{3x}$.	1

State Mean: **0.66/1**

$$\lim_{x\to 0} \frac{\sin\frac{x}{2}}{3x} = \frac{1}{6} \lim_{x\to 0} \frac{\sin\frac{x}{2}}{\frac{x}{2}}$$

$$= \frac{1}{6} \times 1$$

$$= \frac{1}{6}$$

* 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

While candidates could observe that $\lim_{x\to 0} \frac{\sin\frac{x}{2}}{3x}$ involved two constants, 2 and 3, like part (b), various permutations of 2 and 3 were seen in the numerator and denominator, only some of them arriving at the correct answer $\frac{1}{6}$.

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