08	**2a**	Differentiate with respect to x: (i) $(x^2 + 3)^9$	**2**

$\frac{d}{dx}[(x^2 + 3)^9] = 9(x^2 + 3)^8.2x$ by using the function of function (or chain) rule

$= 18x(x^2 + 3)^8$

* 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

Better responses to this part used setting out such as

$$f'(x) = 9(x^2 + 3)^8 \times 2x$$
$$= 18x(x^2 + 3)^8$$

that clearly demonstrated understanding of the chain rule. Common incorrect responses included $f'(x) = 9(x^2 + 3)$, $9(x^2 + 3) \times 2x$ or $9(x^2 + 3)^8 \times 2$.

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