**07 2a** (ii) Differentiate with respect to x:  $(1 + \tan x)^{10}$ .

Using the function of a function, or chain, rule:

$$\frac{d}{dx}[(1 + \tan x)^{10}] = 10(1 + \tan x)^{9}.\sec^{2} x$$
$$= 10 \sec^{2} x(1 + \tan x)^{9}$$

## **Board of Studies: Notes from the Marking Centre**

(ii) Common errors included omitting the indices of 9 on  $(1 + \tan x)$  or 2 on sec x, and incorrectly finding the derivative of  $1 + \tan x$ . Candidates are reminded that the derivative of  $\tan x$  can be obtained using the standard integral sheet.

Source: http://www.boardofstudies.nsw.edu.au/hsc\_exams/

<sup>\*</sup> These solutions have been provided by projectmaths and are not supplied or endorsed by the Board of Studies