2013 11d Differentiate x^2e^x. **2**

Using the product rule, Let $u = x^2$, $u' = 2x$

Let $v = e^x$, $v' = e^x$

$$\frac{dy}{dx} = u'.v + v'.u$$

$$= 2x.\ e^x + e^x.\ x^2$$

$$= 2xe^x + x^2e^x$$

State Mean: **1.73**

* These solutions have been provided by *projectmaths* and are not supplied or endorsed by BOSTES.

Board of Studies: Notes from the Marking Centre

Most candidates completed this question correctly.

Common problems were:

- confusing the product rule with the quotient rule
- not recognising that the function was a product.

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