2015 11 f Differentiate $y = (x + 4)\ln x$. **2**

Using the product rule,

Let $u = x + 4$ $\quad u' = 1$

Let $v = \ln x$ $\quad v' = \frac{1}{x}$

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

$$= 1.\ln x + \frac{1}{x}(x + 4)$$

$$= \ln x + \frac{x+4}{x}$$

State Mean: **1.63**

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

Board of Studies: Notes from the Marking Centre

(f) This part was generally done well. In better responses, candidates often listed u, u', v and v' before they substituted into the product rule.

Common problems were:

- stating the product rule as $u'v - v'u$ or $v'u - u'v$
- incorrectly differentiating u and/or v.