2014 11f The gradient function of a curve $y = f(x)$ is given by $f'(x) = 4x - 5$. The curve passes through the point (2, 3). Find the equation of the curve. **2**

As $f'(x) = 4x - 5$

$f(x) = 2x^2 - 5x + c$

Subs (2, 3):

$3 = 2(2)^2 - 5(2) + c$

$3 = 8 - 10 + c$

$c = 5$

$\therefore f(x) = 2x^2 - 5x + 5$

State Mean: **1.41**

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

Board of Studies: Notes from the Marking Centre

Candidates who found the primitive function $f(x) = 2x^2 - 5x + C$ were generally able to complete this part correctly.

Common problems were:

- omitting the constant of integration;
- incorrectly substituting to find a value for C, for example using $x = 2$ and $f(x) = 0$;
- finding the equation of the tangent at $x = 2$.

http://www.boardofstudies.nsw.edu.au/hsc_exams/2014/pdf_doc/2014-maths.pdf