

## SAMPLE PAPER 2014 (SET F): PAPER 1

### QUESTION 6 (25 MARKS)

ANSWER: C

JUSTIFICATION:

The graph of the cubic function shown is always increasing. Therefore, its slope  $m$  is always positive. When you differentiate a function you are finding its slope.

#### Example

Cubic function:  $y = x^3 + x^2 + x + 1$

$$\frac{dy}{dx} = 3x^2 + 2x + 1 > 0$$

Quadratic Function:  $y = 3x^2 + 2x + 1 > 0$

This quadratic function is positive for all values of  $x$ .

The  $y$  value is positive for all values of  $x$ .

When you plot the function the graph will be above the  $x$ -axis.

