

## LC 2013 (SET D): PAPER 1

### QUESTION 5 (25 MARKS)

#### Question 5 (a)

| Type of function | Function | First derivative | Second derivative |
|------------------|----------|------------------|-------------------|
| Quadratic        | $k$      | B                | I                 |
| Cubic            | $f$      | D                | I                 |
| Trigonometric    | $g$      | A                | III               |
| Exponential      | $h$      | C                | I                 |

#### Question 5 (b)

A quadratic function differentiates to a straight line. A straight line (linear function) differentiates to a constant.

#### MARKING SCHEME NOTES

##### Question 5 (a) [Scale 15D (0, 4, 7, 11, 15)]

- 4: • One or two correct entries  
 • Some correct work with candidates own choice of functions
- 7: • Three to five correct entries  
 • Six to ten correct entries in candidate's own choice of particular quadratic, cubic, trigonometric and exponential functions
- 11: • Six to ten correct entries  
 • Candidate chooses particular quadratic, cubic, trigonometric and exponential functions, with correct first and second derivatives

##### Question 5 (b) [Scale 10B (0, 5, 10)]

- 5: • Some correct statement regarding the first or second derivative of a function  
 • Correct explanation of either first or second derivative