## Question 5 (6 marks)

The graph of the curve $y=g(x)$ for $0 \leq x \leq 3$ is shown below.


Points $A$ and $B$ lie on the curve. Point $A$ is the only point of inflection.
(a) Which one of the following statements is true? Tick the appropriate box, and justify your answer.

$$
\begin{array}{ll}
g^{\prime}(1)<g^{\prime}(2) \\
g^{\prime}(1)=g^{\prime}(2) \\
g^{\prime}(1)>g^{\prime}(2)
\end{array}
$$

Justification:

(b) Which one of the following statements is true? Tick the appropriate box, and justify your answer.

$$
\begin{array}{ll}
g^{\prime \prime}(1)<0 & \square \\
g^{\prime \prime}(1)=0 & \square \\
g^{\prime \prime}(1)>0 & \square
\end{array}
$$

Justification:

(c) Which one of the following statements is true? Tick the appropriate box, and justify your answer.

$$
\begin{array}{ll}
g^{\prime \prime}(2)<0 & \square \\
g^{\prime \prime}(2)=0 & \square \\
g^{\prime \prime}(2)>0 & \square
\end{array}
$$

Justification:


