Practice worksheet | Differentiation and applications

Stationary-point classification

Name: _____ Date: _____

6 questions | 15 marks

1. Find and classify the stationary point of $y = x^2 - 6x + 5$. [2 marks]

2. Find and classify the stationary point of $y = -x^2 + 4x$. [2 marks]

3. Classify the stationary points of $y = x^3 - 3x^2$. [3 marks]

4. Explain why the stationary point of $y = x^3$ is not an extremum. [2 marks]

5. Classify the stationary point of $y = xe^{-x}$. [3 marks]

6. Can a local maximum fail to be an absolute maximum on an unbounded domain? Give an example. [3 marks]