5.8 Optimisation

Checklist

What you should know

By the end of this subtopic you should be able to:

- identify and classify stationary points on a graph:
  - use the first derivative to find stationary points as possible turning points
  - use the second derivative test to see whether a stationary point is a minimum or a maximum
  - recognise when the second derivative test is not conclusive and use alternative methods to see the nature of the stationary point
- understand the difference between local and global minimum and maximum points:
  - recognise when a global minimum or maximum does not correspond to a turning point.
- translate optimisation questions in context into mathematical language and use appropriate methods to find optimum solutions:
  - either use a graphic display calculator and visual inspection of the graph or use the derivative to identify turning points.