

## Applications of Calculus

Higher Mathematics Supplementary Resources

### Section B

This section is designed to provide examples which develop Course Assessment level skills

**NR1** I can determine where the maximum/minimum values lie in a closed interval.

1. For each function determine the maximum AND minimum values within the given limits

(a)  $f(x) = x^3 - 3x^2 - 9x + 27$  for  $-4 \leq x \leq 3$

(b)  $f(x) = x^3 - 3x$  for  $-2 \leq x \leq 3$

(c)  $f(x) = 3x^4 - 5x^3$  for  $-2 \leq x \leq 2$

(d)  $f(x) = 5x^3 - 3x^5 + 3$  for  $0 \leq x \leq 5$

(e)  $f(x) = x^3 - 3x^2$  for  $-6 \leq x \leq 1$

(f)  $f(x) = x^3 - 5x + 8$  for  $-5 \leq x \leq 5$