

**Instructions:** Work together in pairs on the following problem.

1. Let  $f(x) = x^4 - 17$

(a) Prove that  $f(x)$  has a root on the interval  $[1, 3]$ .

(b) Carry out 5 iterations of the Bisection Method and give a resulting approximation of the root of  $f(x)$  in  $[1, 3]$ .

(c) How accurate is your approximation?

(d) Find the minimum number of iterations necessary in order to approximate this root to 5 decimal places of accuracy.