1. Give the intervals on which the given function is continuous
   (a) $f(x) = \sqrt{4 - x}$

   (b) $g(x) = \sqrt{4 - x^2}$

2. Let $f(x) = x^3 - 3x^2 + x - 2$
   (a) Use the IVT to show that $f(x)$ has a root between $x = 2$ and $x = 4$

   (b) Approximate the value of the root accurate to within 0.1 of its exact value