1. Let $f(x) = 14\sin(3x) + 2x^2 - 4x^3$.
   (a) Use the IVT to show that $f(x)$ has a root between $x = -2$ and $x = 2$.
   (b) Use the IVT to show that $f(x)$ has a stationary point between $x = -1$ and $x = 0$.

2. Let $f(x) = \dfrac{1}{x-2}$.
   (a) Use the IVT to show that $f(x)$ has a root between $x = 1$ and $x = 3$.
   (b) Find the exact value of the root by solving $f(x) = 0$. What goes wrong?
   (c) Reconcile your answers to parts (a) and (b).