The Intermediate Value Theorem (IMVT)

Intermediate Value Theorem (IMVT): Let $f$ be a continuous function on the closed interval $[a, b]$. Let $m$ be any number between $f(a)$ and $f(b)$. Then there is at least one number $c$ in $[a, b]$ which satisfies

$$f(c) = m.$$ 

When applying the IMVT to a problem, the following five steps must be clearly established:

1. Define a function $f$.
2. Define a number $m$.
3. Establish that $f$ is continuous.
4. Choose an interval $[a, b]$.
5. Indicate that $m$ is between $f(a)$ and $f(b)$.

Once these five steps have been established, the conclusion of the IMVT can be invoked.