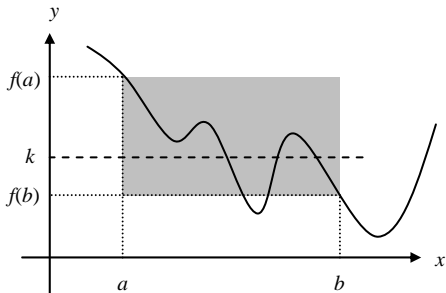


INTERMEDIATE VALUE THEOREM (§2.3)

If f is continuous on the closed interval $[a, b]$ then f takes on every value between $f(a)$ and $f(b)$. Suppose k is any number between $f(a)$ and $f(b)$, then there is at least one number c in $[a, b]$ such that $f(c) = k$.

♫: The Intermediate value theorem tells you that at least one c exists, but it does not give you a method for finding c . This theorem is an example of an *existence theorem*.



- Is f continuous on $[a, b]$?
- Is $f(b) < k < f(a)$?
- In this example, if $a < c < b$, then there are _____ c 's such that $f(c) = k$.
- Label the c 's on the graph as c_1, c_2, \dots