option (a) $f: [a,b] \to (a,b)$ → cont. & 1-1

let $f(x) = \frac{x}{2}$ then $f[a,b] = [\frac{a}{2}, \frac{b}{2}]$ → exist

option(b) $f: [a,b] \to (a,b)$ → cont. & onto

$\Rightarrow f[a,b] = (a,b)$

$\Rightarrow f^{-1}(a,b) = [a,b]$ [as f is onto]

it's contradiction because pre-image of open set is open under continuous map. So not exist ✗

option-c $f: (a,b) \to [a,b]$ f is cont. & 1-1

let $f(x) = x$

$f(a,b) = (a,b)$ & 1-1 also.

So exist.

option(d) $f: (a,b) \to [a,b]$, cont. & onto

$\Rightarrow f^{-1}[a,b] = (a,b)$ [f is onto]

it is again contradiction as preimage of closed set should be closed under continuous map. So not exist ✗