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1. In this problem, just find an appropriate map; you do not need to prove it's a homeomorphism.
 - (a) Find a homeomorphism from the closed unit interval $[0, 1]$ to $[3, 5]$. (Hint: First find a homeomorphism from $[0, 1]$ to $[0, 2]$, and then one from $[0, 2]$ to $[3, 5]$.)
 - (b) Prove that any two closed intervals $[a, b]$ and $[c, d]$ are homeomorphic.
 2. Prove $(0, 1) \simeq \mathbb{R}$. Just find an appropriate map; you do not need to prove it's a homeomorphism.
 3. Prove the Restriction of Continuous Maps Lemma: Let $f : X \rightarrow Y$ be a continuous map between two topological spaces. Then for every subspace $A \subset X$, the restriction of f to A , i.e., $f|_A : A \rightarrow Y$, is continuous.
 4. Prove that if $f : X \rightarrow Y$ is a homeomorphism, then $\forall A \subset X$, $f|_A : A \rightarrow f(A)$ is a homeomorphism.
 5. Separate the following into classes of homeomorphic letters.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(For example, E and F are homeomorphic; so are C and W; but O and Q are not.)
 6. Do problem 5.6 on page 37 of Intuitive Topology.
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