Q1]... Define what it means for a set $A$ to be countable.

Define what it means for two sets $A$ and $B$ to have the same cardinality.

Say whether each of the following sets are countable or uncountable.
(1) $\mathbb{Q}$
(2) $\mathbb{R}$
(3) The set of irrational numbers.
(4) The set of all points in the cartesian plane.
(5) The set of all functions from $\mathbb{R}$ to $\mathbb{R}$.

