1. Decide if the following statement is True or False. 2 points for deciding correctly whether it is T/F and 3 points for a correct explanation.

(a) If $E$ is an interior point of $E$, then $E$ is an accumulation point of $E$.

(b) It is possible for a point $p$ in a set $E$ to be simultaneously both an isolated point of $E$ and an accumulation point of $E$.

(c) Every nonempty set must have a boundary point.

(d) Every infinite set must have an accumulation point.
2. (5pts each part) Determine the set of all interior points, boundary points and accumulations points of each of the following sets. Clearly label which set is which.

(a) $E = \mathbb{N}.$

(b) $E = \{1, 1/2, 1/3, \ldots\}.$

(c) $E = \mathbb{R} \setminus \mathbb{Q}.$

(d) $E = \{x : x^2 < 3\}.$