Example 1.3

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Let $D = \{\, n \in \mathbb{N} \mid n \le 9 \,\}$, $E = \{\, x \in \mathbb{Q} \mid x \le 9 \,\}$,
$H = \{\, x \in \mathbb{R} \mid x^2 - 2 = 0 \,\}$ and $J = \{\, x \in \mathbb{Q} \mid x^2 - 2 = 0 \,\}$

(a) $D = \{\, 1, 2, 3, 4, 5, 6, 7, 8, 9 \,\}$.

(b) $\frac{2}{3}, \frac{9}{4}$, and $\frac{6}{5}$ are rational numbers but are not natural numbers; so they are in E, but are *not* in D..

(c) $H = \{\, \sqrt{2}, -\sqrt{2} \,\}$.

(d) $J = \emptyset$.