

19. (Fall 14 MT 1 - Chifan) Let  $E = [0, 1] \setminus \mathbb{Q}$ . Find  $m(E)$ .

Let  $F = [0, 1] \cap \mathbb{Q}$ . Then  $E \cap F = \emptyset$  and  $E \cup F = [0, 1]$ , so:

$$m([0, 1]) = 1$$

$$= m(E) + m(F)$$

$$= m(E) + 0 \quad (\text{as } F \text{ is countable})$$

$$\Rightarrow m(E) = 1 //$$