

## Quiz 2 Review Questions

7. If  $U = (-1, 0) \cup (0, 1)$  then  $\text{Int } \bar{U} = (-1, 1)$ . ■
8. If  $F = [0, 1] \cup \{2\}$ , then  $\overline{\text{Int } F} = [0, 1]$ . ■
9. If  $A = [-1, 0)$  and  $B = (0, 1]$ , then  $A \cap B = \emptyset$ , so that  $\overline{A \cap B} = \emptyset$ , but  $\bar{A} \cap \bar{B} = \{0\}$ . ■
10. If  $A = (-1, 0]$  and  $B = [0, 1)$ , then  $\text{Int } A \cup \text{Int } B = (-1, 0) \cup (0, 1)$ , but  $A \cup B = (-1, 1)$  and hence  $\text{Int } (A \cup B) = (-1, 1)$ . ■



11. Take  $U_n = (-\frac{1}{n}, \frac{1}{n})$ , so that  $\{0\} = \bigcap_n U_n$  is not open. ■

12. Take  $A = \{0, 1\}$  and  $B = (0, 1)$ , so that  $A \cup B = [0, 1]$  is closed. ■