

MATH 130A Review: Algebra of Sets

1. If the universal set is given by $U = \{0, 1, e, \pi, i\}$, and $A = \{0, 1, e\}$, $B = \{\pi, i\}$ are two subsets, find the following sets:
 - (a) $A \cup B$
 - (b) $A \cap B$
 - (c) A^c
 - (d) B^c
2. If the universal set is given by $U = (-\infty, +\infty) = \mathbb{R}$, and $A = [1, 2] \cup [3, 4]$, $B = [2, 3]$ are two subsets, find the following sets:
 - (a) $A \cup B$
 - (b) $A \cap B$
 - (c) A^c
 - (d) B^c