

6/7/2010

Quiz #5

Name: _____

Key

Show all work clearly and in order. Please box your answers. 10 minutes.

1. Let $A = \{0, 1, 2\}$, $B = \{2, 3\}$ and $\mathcal{U} = \{0, 1, 2, 3, 4\}$.

(a) $A^c = \{3, 4\}$

(b) $A \cap B = \{2\}$

(c) $A \cup B = \{0, 1, 2, 3\}$

(d) $A - B = \{0, 1\}$

(e) $B - A = \{3\}$

(f) $A \Delta B = (A - B) \cup (B - A) = \{0, 1, 3\}$

(g) $\mathcal{P}(B) = \{\emptyset, \{2\}, \{3\}, \{2, 3\}\}$

(h) $A \times B = \{(0, 2), (0, 3), (1, 2), (1, 3), (2, 2), (2, 3)\}$

(i) $\mathcal{P}(\mathcal{P}(\emptyset)) = \mathcal{P}(\{\emptyset\}) = \{\emptyset, \{\emptyset\}\}$

(j) $|\mathcal{P}(\mathcal{U})| = 2^5 = 32$