Math 112 - Quiz 3

September 6, 2017

Name __key__

Score _____

Show all work to receive full credit. Supply explanations when necessary. YOU MUST WORK INDIVIDUALLY.

1. (2 points) If $U =$ the set of odd natural numbers and $B = \{13, 15, 17, 19, 21, 23, \dots\}$, find B'.

$$B' = \{1, 3, 5, 7, 9, 11\}$$

2. (2 points) List all the subsets of $\{2, 4, 6\}$.

$$\{\}, \{2\}, \{4\}, \{6\}, \{2,4\}, \{2,6\},$$
$$\{4,6\}, \{2,4,6\}$$

8 OF THEM.

3. (6 points) Let $A = \{0, 1, 2, 3\}$ and $B = \{0, 1, 3, 5, 9\}$, and think of A and B as subsets of the universal set $U = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$. Determine each of the following.

(a) $B' = \{2, 4, 6, 7, 8\}$

(b) $A \cup B = \{0, 1, 2, 3, 5, 9\}$

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

(d) $(A \cap B)' = \{0, 1, 3\}' = \{2, 4, 5, 6, 7, 8, 9\}$

(e) $B \cap \emptyset = \phi$

(f) $A \cup \emptyset = A = \{0, 1, 2, 3\}$