

Math 112 - Quiz 5

September 6, 2018

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is worth 5 points. YOU MUST WORK INDIVIDUALLY.

1. (1 point) If U is the set of natural numbers and $A = \{4, 6, 8, 10, 12, \dots\}$, find A' .

$$A' = \{1, 2, 3, 5, 7, 9, 11, \dots\}$$

$= \{2\} \cup O$, WHERE O IS THE SET OF ODD NATURAL #'S

2. (1 point) Let $U = \{2, 3, 5, 7, 9, 11, 13, 17, 19\}$ and $D = \{2, 3, 5\}$. Find D' .

$$D' = \{7, 9, 11, 13, 17, 19\}$$

3. (3 points) Let $U = \{11, 12, 13, 14, 15, 16, 17, 18, 19, 20\}$, $A = \{14, 15, 16, 17\}$, and $C = \{12, 14, 15, 19, 20\}$. Find each of the following.

(a) $A \cup C$

$$A \cup C = \{12, 14, 15, 16, 17, 19, 20\}$$

(b) $(A \cup C)'$

\hookrightarrow IN U , BUT NOT IN $A \cup C$

$$(A \cup C)' = \{11, 13, 18\}$$

(c) $A' \cup C'$

$$A' = \{11, 12, 13, 18, 19, 20\}$$

$$C' = \{11, 13, 16, 17, 18\}$$

$$A' \cup C' = \{11, 12, 13, 16, 17, 18, 19, 20\}$$