$\qquad$ Mod $\qquad$
1.) Place an $X$ in each box that applies to the number in the given row. ( 7 pts total)

|  | Not Real | $R$ | $Q$ | $P$ | $Z$ | $W$ | $N$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $-\sqrt{49}$ |  |  |  |  |  |  |  |
| $\sqrt{-16}$ |  |  |  |  |  |  |  |
| $1.739 \ldots$ |  |  |  |  |  |  |  |
| $-2 . \overline{3}$ |  |  |  |  |  |  |  |
| -17 |  |  |  |  |  |  |  |
| 10.795 |  |  |  |  |  |  |  |

Use the given sets to find the following. Use the Venn diagram if you would like. Write answers in roster or interval notation. (Be sure to remember when you can and cannot use one of these to denote your answer). (\#s 2-9 are a total of 25 pts)

$$
\begin{aligned}
& A=\{x \mid-2 \leq x \leq 2\} \\
& B=\{x \mid 0<x \leq 7\} \\
& C=\{x \mid-5<x<1\}
\end{aligned}
$$

2.) $A \cap C=$
3.) $B \cap C=$
4.) $(A \cap B) \cup C=$
5.) $(A \cup C) \cap(A \cup B)=$

6.) $C \cup(A \cap C)=$
7.) $A^{\prime}=$
8.) $B^{\prime} \cap C=$
9.) $(B \cap C)^{\prime}=$

Use the given sets to find the following. Use the Venn diagram if you would like. Write answers in roster or interval notation. (Be sure to remember when you can and cannot use one of these to denote your answer). Write your answers to \#10 and \#11 in interval notation. (\#s 10-14 are worth 17 pts total)

$$
\begin{aligned}
& A=\{x \mid x \in W,-7<x \leq 8\} \\
& B=\{x \mid x \in Z,-4<x<5\} \\
& C=\{x \mid x \in N, x \leq 4\}
\end{aligned}
$$

10.) $A \cup C=$
11.) $A \cup C^{\prime}=$
12.) $(B \cap C) \cap A^{\prime}=$

13.)
$(A \cap B)^{\prime} \cup(A \cup C)^{\prime}=$
14.) $A \cap B \cap C^{\prime}=$

