

Math 104, Fall 2008

The following are some practice problems on the topics of chapter 6.1:

Define the sets

$U = \{\text{New Jersey blood donors}\}$ = universal set, i.e. the entire group of people we are considering in this collection of problems are NJ blood donors.

$O = \{\text{NJ blood donors with type O blood}\}$,

$N = \{\text{NJ blood donors with a negative blood type}\}$,

$P = \{\text{NJ blood donors who donate platelets}\}$.

For each of the following sets, describe the members of the set in words, and draw a shaded Venn diagram to illustrate the set.

1. $O \cup N$

2. $P \cap O \cap N$

3. $P \cap (O \cup N)$

4. $(P \cap O) \cup N$

5. $\overline{(P \cap O)} \cup N$

6. $\overline{P \cup O \cup N}$

7. $P \cap O \cap \overline{N}$

Comment: When working with three or more sets, parentheses matter if both intersections and unions occur (examples 3, 4, and 5), but not if only intersections or only unions occur (examples 2, 6, and 7).