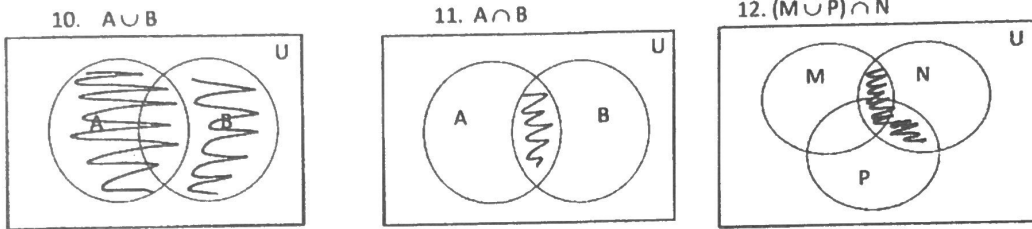


Set Theory Worksheet

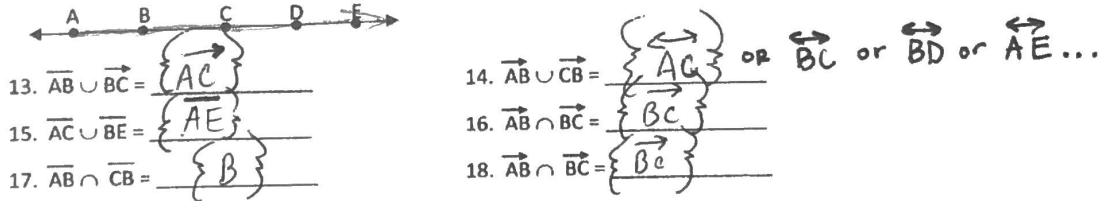
Directions: If  $M = \{2, 3, 4, 5, 8, 9\}$ ,  $N = \{1, 4, 5, 8\}$ ,  $P = \{3, 4, 6\}$  and the universal set  $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ , find each of the following.

1.  $M \cap N = \{4, 5, 8\}$
2.  $P' = \{1, 2, 5, 7, 8, 9\}$
3.  $M \cup P = \{2, 3, 4, 5, 6, 8, 9\}$
4.  $(M \cup P)' = \{1, 7\}$
5.  $(M \cup P) \cap N = \{4, 5, 8\}$
6.  $(M \cap P) \cup N = \{1, 3, 4, 5, 8\}$
7.  $P - N = \{3, 6\}$
8.  $M - N = \{2, 3, 9\}$
9.  $N - M = \{1\}$
10.  $P \cap N = \{4\}$
11.  $(P \cap N)' = \{1, 2, 3, 5, 6, 7, 8, 9\}$
12.  $N' = \{2, 3, 6, 7, 9\}$
13. If  $Q = \{1, 2, 9\}$ , what is  $P \cap Q$ ?  $\{3\}$  or  $\emptyset$
14. Is  $\{1, 5, 8\} \subseteq N$ ? yes
15. Is  $\{1, 5, 8\} \subseteq P$ ? no
16. List all the subsets of P.  $\{3\}, \{4\}, \{6\}, \{3, 4\}, \{4, 6\}, \{3, 6\}, \{3, 4, 6\}, \{ \}$
17. List all the elements of M.  $2, 3, 4, 5, 8, 9$

Directions: Shade each of these to represent the given expression.



Directions: Given the line below, write each of the following sets:



Directions: Given the parallelogram, write each of the following sets:

19.  $\overline{AB} \cap \overline{BC} = \{ B \}$
20.  $\overline{EC} \cup \overline{EA} = \{ \overline{AC} \}$
21.  $\overline{AC} \cap \overline{DB} = \{ E \}$
22.  $\overline{DC} \cap \overline{AB} = \{ \emptyset \}$
23.  $\overline{AC} \cap \overline{EC} = \{ \overline{EC} \}$
24.  $\overline{BA} \cup \overline{BC} = \{ \angle ABC \}$

