

Sets

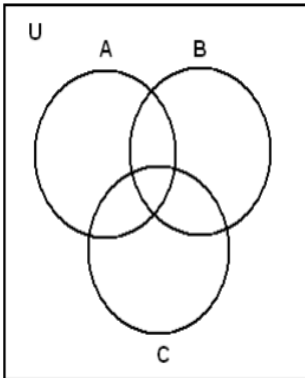
Mr Aidan Ryan

ARNMaths.weebly.com

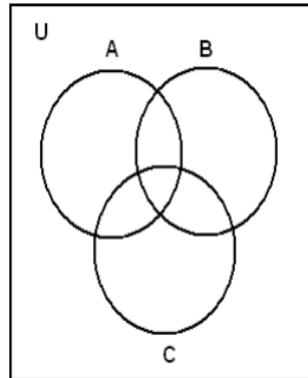
Question 1

Shade in the region below

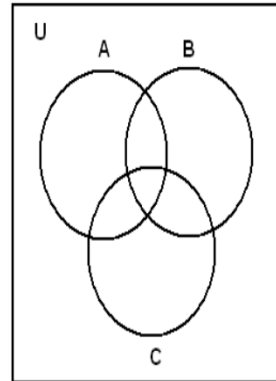
$$(A \cup B)' \cap C$$



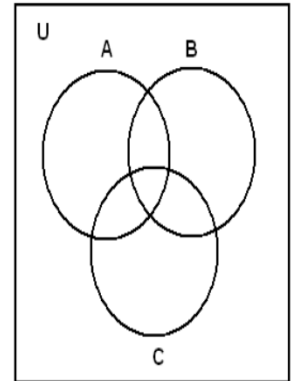
$$B' \cap (A \cap C)$$



$$A' - (B \cup C)$$

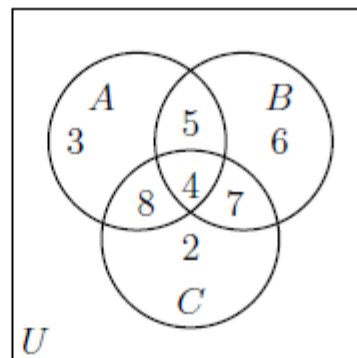


$$(A \cap B) \cup C$$



Question 2

Using the Venn diagram below, list the element of each of these sets.



(a) $A \cap B$

(c) $A \cap B \cap C$

(b) $B \cup C$

(d) $(A \cup B) \cap C$

Question 3

List the elements in each set.

(a) $\{x \mid x \text{ is an even natural number less than } 12\}$

(b) $\{x \mid x \text{ is a natural number greater than } 8\}$

(c) $\{x \mid x \text{ is an odd natural number } 2 \text{ and } 13\}$

(d) $\{x \mid x \text{ is an prime number less than } 18\}$

Question 4

Using the sets D, E, and F, list the elements in each set. If the set is empty write \emptyset .

$$D = \{3, 5, 7\} \quad E = \{2, 4, 6, 8\} \quad F = \{1, 2, 3, 4, 5\}$$

(a) $D \cap E$

(c) $(D \cap E) \cup (F \cap E)$

(b) $(D \cup E) \cap F$

(d) $(D \cup E) \cap (D \cup F)$

Question 5

- (a) The sets A , B , and C are as follows:

$$A = \{2, 3, 4, 5, 6\}, \quad B = \{2, 4, 6, 8, 10\}, \quad \text{and} \quad C = \{1, 4, 8, 12, 14\}.$$

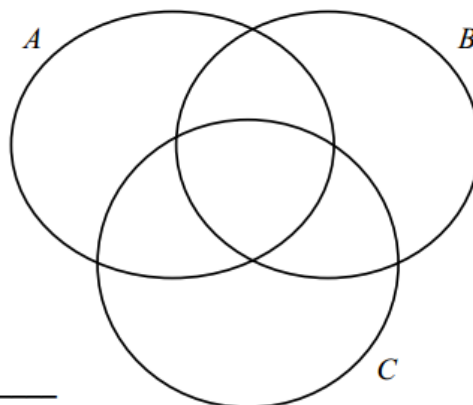
- (i) Complete the Venn diagram.

- (ii) List the elements of each of the following sets:

$$A \cap B = \underline{\hspace{5cm}}$$

$$B \setminus (A \cap C) = \underline{\hspace{5cm}}$$

$$(B \setminus A) \cup (B \setminus C) = \underline{\hspace{5cm}}$$

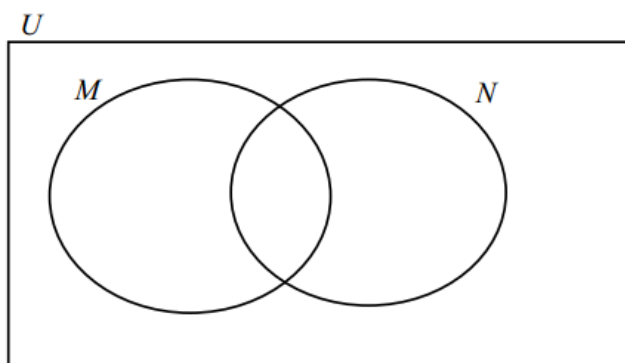


- (iii) Write down a null set, in terms of A , B , and C . $\underline{\hspace{5cm}}$

- (b) In a table quiz, 100 questions were asked. Team M answered 72 questions correctly. Team N answered 38 questions correctly.

- (i) Find, with the aid of the Venn diagram, the minimum number of questions answered correctly by both teams.

Minimum =



- (ii) Find, with the aid of the Venn diagram, the maximum number of questions answered correctly by both teams.

Maximum =

