

$$Ans4 = \left[\begin{array}{l} A \cup B = \{4, 5, 7, 8, 10, 13, 15, 16\} \\ A \cap B = \{16\} \\ A \cup B' = \{4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 16, 17\} \\ B \cap A' = \{8, 15\} \\ A - B = \{4, 5, 7, 10, 13\} \\ B' - A = \{6, 9, 11, 12, 14, 17\} \\ (A \cup B)' = \{6, 9, 11, 12, 14, 17\} \\ A' \cap B' = \{6, 9, 11, 12, 14, 17\} \\ (A - B)' = \{6, 8, 9, 11, 12, 14, 15, 16, 17\} \end{array} \right], \quad Ans5 = \left[\begin{array}{l} .1 = (A' = \{area3, area4\}) \\ .2 = (B - A = \{area3\}) \\ .3 = ((A \cup B)' = \{area4\}) \\ .4 = (A \cup B = \{area1, area2, area3, area4, area5, area6\}) \\ .5 = (C \cap (A \cup B) = \{area4, area5, area6\}) \\ .6 = ((A \cap C) \cup (B \cap C) = \{area4, area5, area6\}) \\ .7 = ((C - A) \cap (C - B) = \{area7\}) \\ .8 = (B' \cup C' = \{area1, area2, area3, area4, area7, area8\}) \\ .9 = ((C - A)' - B = \{area1, area4, area8\}) \end{array} \right]$$

$$\text{Ans4} = \left[\begin{array}{l} A \cup B = \{3, 6, 8, 9, 10, 14\} \\ A \cap B = \{9, 10\} \\ A \cup B' = \{2, 4, 5, 7, 8, 9, 10, 11, 12, 13\} \\ B \cap A' = \{3, 6, 14\} \\ A - B = \{8\} \\ B' - A = \{2, 4, 5, 7, 11, 12, 13\} \\ (A \cup B)' = \{2, 4, 5, 7, 11, 12, 13\} \\ A' \cap B' = \{2, 4, 5, 7, 11, 12, 13\} \\ (A - B)' = \{2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14\} \end{array} \right], \text{ Ans5} = \left[\begin{array}{l} .1 = (A \cup B = \{\text{area1, area2, area3}\}) \\ .2 = (A - B' = \{\text{area2}\}) \\ .3 = (A' \cap B' = \{\text{area4}\}) \\ .4 = (B \cup C = \{\text{area2, area3, area4, area5, area6, area7}\}) \\ .5 = (B \cup (A \cap C) = \{\text{area2, area3, area4, area5, area6}\}) \\ .6 = ((A \cup B) \cap (B \cup C) = \{\text{area2, area3, area4, area5, area6}\}) \\ .7 = ((C - A) \cup (C - B) = \{\text{area4, area6, area7}\}) \\ .8 = (B' \cup C' = \{\text{area1, area2, area3, area4, area7, area8}\}) \\ .9 = (C \cap (B - A)' = \{\text{area4, area5, area7}\}) \end{array} \right]$$

$$\begin{aligned}
Ans1 &= \left[.1 = \begin{bmatrix} area1 = \{0, 4, 5, 7\} \\ area2 = \{ \} \\ area3 = \{1, 3, 6\} \\ area4 = \{2, 8, 9, 10\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 0 & n(A \cup B) = 7 \\ n(A - B) = 4 & n(U - (A \cup B)) = 4 \\ n(B - A) = 3 & Math@MUT \end{bmatrix} \right] \\
Ans2 &= \left[.1 = \begin{bmatrix} area1 = \{17, 18\} \\ area2 = \{8\} \\ area3 = \{4, 5, 9, 11\} \\ area4 = \{6, 7, 10, 12, 13, 14, 15, 16\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 1 & n(A \cup B) = 7 \\ n(A - B) = 2 & n(U - (A \cup B)) = 8 \\ n(B - A) = 4 & Math@MUT \end{bmatrix} \right] \\
Ans3 &= \left[.1 = \begin{bmatrix} area1 = \{3, 7, 13, 14\} \\ area2 = \{8\} \\ area3 = \{4, 16\} \\ area4 = \{ \} \\ area5 = \{ \} \\ area6 = \{15\} \\ area7 = \{2, 6\} \\ area8 = \{1, 5, 9, 10, 11, 12\} \end{bmatrix}, .2 = \begin{bmatrix} n(\text{intersect}(A, B, C)) = 0 & n(A - B) = 4 \\ n(\text{union}(A, B, C)) = 10 & n(B - A) = 3 \\ n(A \cap B) = 1 & n(C \cap (A \cup B)) = 1 \\ n(B \cap C) = 1 & n(C \cup (A \cap B)) = 4 \\ n(A \cup C) = 8 & n(\text{intersect}(A, B, C)) = 16 \\ n(B \cup C) = 6 & Math@MUT \end{bmatrix} \right] \\
Ans4 &= \begin{bmatrix} A \cup B = \{1, 2, 4, 6, 7, 8, 9, 10, 11, 12\} \\ A \cap B = \{2\} \\ A \cup B' = \{2, 3, 5, 6, 7, 8, 9, 10, 11, 13\} \\ B \cap A' = \{1, 4, 12\} \\ A - B = \{6, 7, 8, 9, 10, 11\} \\ B' - A = \{3, 5, 13\} \\ (A \cup B)' = \{3, 5, 13\} \\ A' \cap B' = \{3, 5, 13\} \\ (A - B)' = \{1, 2, 3, 4, 5, 12, 13\} \end{bmatrix}, \quad Ans5 = \begin{bmatrix} .1 = (A \cap B = \{area2\}) \\ .2 = (B - A = \{area3\}) \\ .3 = ((A \cap B)' = \{area1, area3, area4\}) \\ .4 = (B' = \{area1, area4, area7, area8\}) \\ .5 = (C \cup (A \cap B) = \{area2, area4, area5, area6, area7\}) \\ .6 = ((A \cup C) \cap (B \cup C) = \{area2, area4, area5, area6, area7\}) \\ .7 = ((B - A) \cup (B - C) = \{area2, area3, area6\}) \\ .8 = (A' - B' = \{area3, area6\}) \\ .9 = ((B - A)' - C' = \{area4, area5, area7\}) \end{bmatrix}
\end{aligned}$$

$$\begin{aligned}
Ans1 &= \left[.1 = \begin{bmatrix} area1 = \{5, 7, 8\} \\ area2 = \{12, 14\} \\ area3 = \{6, 9\} \\ area4 = \{4, 10, 11, 13, 15\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 2 & n(A \cup B) = 7 \\ n(A - B) = 3 & n(U - (A \cup B)) = 5 \\ n(B - A) = 2 & Math@MUT \end{bmatrix} \right] \\
Ans2 &= \left[.1 = \begin{bmatrix} area1 = \{1, 3, 9, 11\} \\ area2 = \{8, 12\} \\ area3 = \{10\} \\ area4 = \{2, 4, 5, 6, 7, 13, 14\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 2 & n(A \cup B) = 7 \\ n(A - B) = 4 & n(U - (A \cup B)) = 7 \\ n(B - A) = 1 & Math@MUT \end{bmatrix} \right] \\
Ans3 &= \left[.1 = \begin{bmatrix} area1 = \{2, 3, 8\} \\ area2 = \{4\} \\ area3 = \{\} \\ area4 = \{\} \\ area5 = \{1\} \\ area6 = \{12\} \\ area7 = \{0, 9\} \\ area8 = \{5, 6, 7, 10, 11, 13\} \end{bmatrix}, .2 = \begin{bmatrix} n(\text{intersect}(A, B, C)) = 1 & n(A - B) = 3 \\ n(\text{union}(A, B, C)) = 8 & n(B - A) = 1 \\ n(A \cap B) = 2 & n(C \cap (A \cup B)) = 2 \\ n(B \cap C) = 2 & n(C \cup (A \cap B)) = 5 \\ n(A \cup C) = 8 & n(\text{intersect}(A, B, C)') = 13 \\ n(B \cup C) = 5 & Math@MUT \end{bmatrix} \right] \\
Ans4 &= \left[\begin{aligned} A \cup B &= \{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\} \\ A \cap B &= \{4, 7, 10\} \\ A \cup B' &= \{1, 2, 4, 5, 6, 7, 8, 9, 10, 12\} \\ B \cap A' &= \{3, 11, 13\} \\ A - B &= \{6, 8, 9, 12\} \\ B' - A &= \{1, 2, 5\} \\ (A \cup B)' &= \{1, 2, 5\} \\ A' \cap B' &= \{1, 2, 5\} \\ (A - B)' &= \{1, 2, 3, 4, 5, 7, 10, 11, 13\} \end{aligned} \right], Ans5 &= \left[\begin{aligned} .1 &= (B' = \{area1, area4\}) \\ .2 &= (B' - A = \{area4\}) \\ .3 &= ((A - B) \cap (B - A) = \{\}) \\ .4 &= (C' = \{area1, area2, area3, area8\}) \\ .5 &= (A \cap (B \cup C) = \{area2, area4, area5\}) \\ .6 &= ((A \cap B) \cup (A \cap C) = \{area2, area4, area5\}) \\ .7 &= ((A - B) \cup (A - C) = \{area1, area2, area4\}) \\ .8 &= (A' \cup C' = \{area1, area2, area3, area6, area7, area8\}) \\ .9 &= (A' \cap (C - B)' = \{area3, area6, area8\}) \end{aligned} \right]
\end{aligned}$$

$$\text{Ans4} = \begin{bmatrix} A \cup B = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 10, 11\} \\ A \cap B = \{0, 6\} \\ A \cup B' = \{0, 2, 4, 6, 7, 9, 11\} \\ B \cap A' = \{1, 3, 5, 8, 10\} \\ A - B = \{2, 4, 7, 11\} \\ B' - A = \{9\} \\ (A \cup B)' = \{9\} \\ A' \cap B' = \{9\} \\ (A - B)' = \{0, 1, 3, 5, 6, 8, 9, 10\} \end{bmatrix}, \text{ Ans5} = \begin{bmatrix} .1 = (B' = \{area1, area4\}) \\ .2 = (A - B' = \{area2\}) \\ .3 = (A' \cap B' = \{area4\}) \\ .4 = (A \cap C = \{area4, area5\}) \\ .5 = (B \cup (A \cap C) = \{area2, area3, area4, area5, area6\}) \\ .6 = ((A \cup B) \cap (B \cup C) = \{area2, area3, area4, area5, area6\}) \\ .7 = ((B - A) \cap (B - C) = \{area3\}) \\ .8 = (B' - A' = \{area1, area4\}) \\ .9 = (B' \cap (C - A)' = \{area1, area4, area8\}) \end{bmatrix}$$

$$\begin{aligned}
Ans1 &= \left[.1 = \begin{bmatrix} area1 = \{8\} \\ area2 = \{3, 5\} \\ area3 = \{4, 9, 13\} \\ area4 = \{2, 6, 7, 10, 11, 12\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 2 & n(A \cup B) = 6 \\ n(A - B) = 1 & n(U - (A \cup B)) = 6 \\ n(B - A) = 3 & Math@MUT \end{bmatrix} \right] \\
Ans2 &= \left[.1 = \begin{bmatrix} area1 = \{3, 6, 11, 12\} \\ area2 = \{7, 8\} \\ area3 = \{4, 9\} \\ area4 = \{2, 5, 10\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 2 & n(A \cup B) = 8 \\ n(A - B) = 4 & n(U - (A \cup B)) = 3 \\ n(B - A) = 2 & Math@MUT \end{bmatrix} \right] \\
Ans3 &= \left[.1 = \begin{bmatrix} area1 = \{7, 10, 11, 12\} \\ area2 = \{8, 14\} \\ area3 = \{1\} \\ area4 = \{5\} \\ area5 = \{ \} \\ area6 = \{2, 13\} \\ area7 = \{3, 4, 15\} \\ area8 = \{0, 6, 9\} \end{bmatrix}, .2 = \begin{bmatrix} n(intersect(A, B, C)) = 0 & n(A - B) = 5 \\ n(union(A, B, C)) = 13 & n(B - A) = 3 \\ n(A \cap B) = 2 & n(C \cap (A \cup B)) = 3 \\ n(B \cap C) = 2 & n(C \cup (A \cap B)) = 8 \\ n(A \cup C) = 12 & n(intersect(A, B, C))' = 16 \\ n(B \cup C) = 9 & Math@MUT \end{bmatrix} \right] \\
Ans4 &= \begin{bmatrix} A \cup B = \{0, 2, 3, 4, 5, 6, 9, 11\} \\ A \cap B = \{5\} \\ A \cup B' = \{1, 2, 5, 7, 8, 9, 10, 11, 12\} \\ B \cap A' = \{0, 3, 4, 6\} \\ A - B = \{2, 9, 11\} \\ B' - A = \{1, 7, 8, 10, 12\} \\ (A \cup B)' = \{1, 7, 8, 10, 12\} \\ A' \cap B' = \{1, 7, 8, 10, 12\} \\ (A - B)' = \{0, 1, 3, 4, 5, 6, 7, 8, 10, 12\} \end{bmatrix}, \quad Ans5 = \begin{bmatrix} .1 = (A \cup B = \{area1, area2, area3\}) \\ .2 = (A - B' = \{area2\}) \\ .3 = ((A \cup B)' = \{area4\}) \\ .4 = (A \cap B = \{area2, area5\}) \\ .5 = (B \cup (A \cap C) = \{area2, area3, area4, area5, area6\}) \\ .6 = ((A \cup B) \cap (B \cup C) = \{area2, area3, area4, area5, area6\}) \\ .7 = ((B - A) \cap (B - C) = \{area3\}) \\ .8 = (A' - B' = \{area3, area6\}) \\ .9 = ((C - B)' - A = \{area3, area6, area8\}) \end{bmatrix}
\end{aligned}$$

$$\begin{aligned}
Ans1 &= \left[.I = \begin{bmatrix} area1 = \{3, 5, 7, 10, 13\} \\ area2 = \{8\} \\ area3 = \{4, 15\} \\ area4 = \{6, 9, 11, 12, 14\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 1 & n(A \cup B) = 8 \\ n(A - B) = 5 & n(U - (A \cup B)) = 5 \\ n(B - A) = 2 & Math@MUT \end{bmatrix} \right] \\
Ans2 &= \left[.I = \begin{bmatrix} area1 = \{1, 3, 4, 7, 8, 10\} \\ area2 = \{9\} \\ area3 = \{5, 14\} \\ area4 = \{2, 6, 11, 12, 13, 15\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 1 & n(A \cup B) = 9 \\ n(A - B) = 6 & n(U - (A \cup B)) = 6 \\ n(B - A) = 2 & Math@MUT \end{bmatrix} \right] \\
Ans3 &= \left[.I = \begin{bmatrix} area1 = \{2, 3, 5, 7\} \\ area2 = \{8\} \\ area3 = \{9\} \\ area4 = \{0, 14\} \\ area5 = \{\} \\ area6 = \{10\} \\ area7 = \{6, 13, 15\} \\ area8 = \{1, 4, 11, 12\} \end{bmatrix}, .2 = \begin{bmatrix} n(intersect(A, B, C)) = 0 & n(A - B) = 6 \\ n(union(A, B, C)) = 12 & n(B - A) = 2 \\ n(A \cap B) = 1 & n(C \cap (A \cup B)) = 3 \\ n(B \cap C) = 1 & n(C \cup (A \cap B)) = 7 \\ n(A \cup C) = 11 & n(intersect(A, B, C)') = 16 \\ n(B \cup C) = 8 & Math@MUT \end{bmatrix} \right] \\
Ans4 &= \left[\begin{aligned} A \cup B &= \{1, 2, 4, 7, 8, 10, 11, 12\} \\ A \cap B &= \{7, 11\} \\ A \cup B' &= \{0, 2, 3, 5, 6, 7, 9, 11\} \\ B \cap A' &= \{1, 4, 8, 10, 12\} \\ A - B &= \{2\} \\ B' - A &= \{0, 3, 5, 6, 9\} \\ (A \cup B)' &= \{0, 3, 5, 6, 9\} \\ A' \cap B' &= \{0, 3, 5, 6, 9\} \\ (A - B)' &= \{0, 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\} \end{aligned} \right], Ans5 &= \left[\begin{aligned} .I &= (A \cap B = \{area2\}) \\ .2 &= (B' - A = \{area4\}) \\ .3 &= (A' \cap B' = \{area4\}) \\ .4 &= (A \cup B = \{area1, area2, area3, area4, area5, area6\}) \\ .5 &= (B \cap (A \cup C) = \{area2, area5, area6\}) \\ .6 &= ((A \cap B) \cup (B \cap C) = \{area2, area5, area6\}) \\ .7 &= ((A - B) \cap (A - C) = \{area1\}) \\ .8 &= (A' \cap B' = \{area7, area8\}) \\ .9 &= ((C - A)' - B' = \{area2, area3, area5\}) \end{aligned} \right]
\end{aligned}$$

$$\text{Ans4} = \left[\begin{array}{l} A \cup B = \{4, 5, 7, 8, 9, 10, 13, 14, 15\} \\ A \cap B = \{10\} \\ A \cup B' = \{4, 6, 10, 11, 12, 14, 15\} \\ B \cap A' = \{5, 7, 8, 9, 13\} \\ A - B = \{4, 14, 15\} \\ B' - A = \{6, 11, 12\} \\ (A \cup B)' = \{6, 11, 12\} \\ A' \cap B' = \{6, 11, 12\} \\ (A - B)' = \{5, 6, 7, 8, 9, 10, 11, 12, 13\} \end{array} \right], \text{ Ans5} = \left[\begin{array}{l} .1 = (B' = \{area1, area4\}) \\ .2 = (A' - B = \{area4\}) \\ .3 = (A' \cap B' = \{area4\}) \\ .4 = (B' = \{area1, area4, area7, area8\}) \\ .5 = (A \cap (B \cup C) = \{area2, area4, area5\}) \\ .6 = ((A \cap B) \cup (A \cap C) = \{area2, area4, area5\}) \\ .7 = ((A - B) \cup (A - C) = \{area1, area2, area4\}) \\ .8 = (B' - A' = \{area1, area4\}) \\ .9 = (C' \cap (A - B)' = \{area2, area3, area8\}) \end{array} \right]$$

$$\begin{aligned}
Ans1 &= \left[.1 = \begin{bmatrix} area1 = \{5, 6, 10, 14\} \\ area2 = \{9\} \\ area3 = \{7, 11, 12, 13, 16\} \\ area4 = \{4, 8, 15\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 1 & n(A \cup B) = 10 \\ n(A - B) = 4 & n(U - (A \cup B)) = 3 \\ n(B - A) = 5 & Math@MUT \end{bmatrix} \right] \\
Ans2 &= \left[.1 = \begin{bmatrix} area1 = \{4\} \\ area2 = \{5, 8\} \\ area3 = \{7, 9, 12, 13, 14\} \\ area4 = \{3, 6, 10, 11, 15, 16\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 2 & n(A \cup B) = 8 \\ n(A - B) = 1 & n(U - (A \cup B)) = 6 \\ n(B - A) = 5 & Math@MUT \end{bmatrix} \right] \\
Ans3 &= \left[.1 = \begin{bmatrix} area1 = \{1, 13\} \\ area2 = \{5, 11\} \\ area3 = \{16\} \\ area4 = \{6\} \\ area5 = \{4\} \\ area6 = \{ \} \\ area7 = \{10, 12, 15\} \\ area8 = \{2, 3, 7, 8, 9, 14, 17\} \end{bmatrix}, .2 = \begin{bmatrix} n(intersect(A, B, C)) = 1 & n(A - B) = 3 \\ n(union(A, B, C)) = 10 & n(B - A) = 1 \\ n(A \cap B) = 3 & n(C \cap (A \cup B)) = 2 \\ n(B \cap C) = 1 & n(C \cup (A \cap B)) = 7 \\ n(A \cup C) = 9 & n(intersect(A, B, C))' = 16 \\ n(B \cup C) = 8 & Math@MUT \end{bmatrix} \right] \\
Ans4 &= \left[\begin{aligned} A \cup B &= \{3, 4, 5, 7, 8, 12, 14, 15, 16, 17\} \\ A \cap B &= \{7, 8, 14\} \\ A \cup B' &= \{3, 5, 6, 7, 8, 9, 10, 11, 13, 14, 16\} \\ B \cap A' &= \{4, 12, 15, 17\} \\ A - B &= \{3, 5, 16\} \\ B' - A &= \{6, 9, 10, 11, 13\} \\ (A \cup B)' &= \{6, 9, 10, 11, 13\} \\ A' \cap B' &= \{6, 9, 10, 11, 13\} \\ (A - B)' &= \{4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17\} \end{aligned} \right], Ans5 &= \left[\begin{aligned} .1 &= (A \cup B = \{area1, area2, area3\}) \\ .2 &= (B' - A' = \{area1\}) \\ .3 &= ((A - B) \cup (B - A) = \{area1, area3\}) \\ .4 &= (B \cap C = \{area5, area6\}) \\ .5 &= (C \cup (A \cap B) = \{area2, area4, area5, area6, area7\}) \\ .6 &= ((A \cup C) \cap (B \cup C) = \{area2, area4, area5, area6, area7\}) \\ .7 &= ((A - B) \cup (A - C) = \{area1, area2, area4\}) \\ .8 &= (B' \cap C' = \{area1, area8\}) \\ .9 &= ((A - C)' - B = \{area4, area7, area8\}) \end{aligned} \right]
\end{aligned}$$

$$Ans2 = \left[.1 = \begin{bmatrix} area1 = \{3, 12\} \\ area2 = \{8\} \\ area3 = \{4, 5, 6, 9\} \\ area4 = \{1, 2, 7, 10, 11\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 1 & n(A \cup B) = 7 \\ n(A - B) = 2 & n(U - (A \cup B)) = 5 \\ n(B - A) = 4 & Math@MUT \end{bmatrix} \right]$$

$$\text{Ans4} = \left[\begin{array}{l} A \cup B = \{4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16\} \\ A \cap B = \{ \} \\ A \cup B' = \{3, 5, 6, 9, 13, 14, 16\} \\ B \cap A' = \{4, 7, 8, 10, 11, 12, 15\} \\ A - B = \{5, 6, 13, 14, 16\} \\ B' - A = \{3, 9\} \\ (A \cup B)' = \{3, 9\} \\ A' \cap B' = \{3, 9\} \\ (A - B)' = \{3, 4, 7, 8, 9, 10, 11, 12, 15\} \end{array} \right], \text{ Ans5} = \left[\begin{array}{l} .1 = (A' = \{area3, area4\}) \\ .2 = (B' - A = \{area4\}) \\ .3 = (A' \cap B' = \{area4\}) \\ .4 = (C' = \{area1, area2, area3, area8\}) \\ .5 = (A \cup (B \cap C) = \{area1, area2, area4, area5, area6\}) \\ .6 = ((A \cup B) \cap (A \cup C) = \{area1, area2, area4, area5, area6\}) \\ .7 = ((B - A) \cap (B - C) = \{area3\}) \\ .8 = (A' - C' = \{area6, area7\}) \\ .9 = (A \cap (C - B)' = \{area1, area2, area5\}) \end{array} \right]$$

$$\text{Ans4} = \left[\begin{array}{l} A \cup B = \{4, 5, 7, 8, 11, 13, 14, 15, 16\} \\ A \cap B = \{13\} \\ A \cup B' = \{6, 8, 9, 10, 11, 12, 13\} \\ B \cap A' = \{4, 5, 7, 14, 15, 16\} \\ A - B = \{8, 11\} \\ B' - A = \{6, 9, 10, 12\} \\ (A \cup B)' = \{6, 9, 10, 12\} \\ A' \cap B' = \{6, 9, 10, 12\} \\ (A - B)' = \{4, 5, 6, 7, 9, 10, 12, 13, 14, 15, 16\} \end{array} \right], \text{Ans5} = \left[\begin{array}{l} .1 = (B' = \{area1, area4\}) \\ .2 = (A' - B' = \{area3\}) \\ .3 = ((A - B) \cap (B - A) = \{\}) \\ .4 = (A' = \{area3, area6, area7, area8\}) \\ .5 = (A \cup (B \cap C) = \{area1, area2, area4, area5, area6\}) \\ .6 = ((A \cup B) \cap (A \cup C) = \{area1, area2, area4, area5, area6\}) \\ .7 = ((C - A) \cup (C - B) = \{area4, area6, area7\}) \\ .8 = (A' \cup B' = \{area1, area3, area4, area6, area7, area8\}) \\ .9 = (C' \cap (B - A)' = \{area1, area2, area8\}) \end{array} \right]$$

$$\text{Ans4} = \begin{bmatrix} A \cup B = \{3, 4, 6, 8, 9, 10, 11, 12, 13, 14\} \\ A \cap B = \{6, 12\} \\ A \cup B' = \{3, 5, 6, 7, 10, 11, 12, 13, 14\} \\ B \cap A' = \{4, 8, 9\} \\ A - B = \{3, 10, 11, 13, 14\} \\ B' - A = \{5, 7\} \\ (A \cup B)' = \{5, 7\} \\ A' \cap B' = \{5, 7\} \\ (A - B)' = \{4, 5, 6, 7, 8, 9, 12\} \end{bmatrix}, \text{ Ans5} = \begin{bmatrix} .1 = (A \cap B = \{\text{area2}\}) \\ .2 = (A - B' = \{\text{area2}\}) \\ .3 = (A' \cup B' = \{\text{area1}, \text{area3}, \text{area4}\}) \\ .4 = (A' = \{\text{area3}, \text{area6}, \text{area7}, \text{area8}\}) \\ .5 = (A \cup (B \cap C) = \{\text{area1}, \text{area2}, \text{area4}, \text{area5}, \text{area6}\}) \\ .6 = ((A \cup B) \cap (A \cup C) = \{\text{area1}, \text{area2}, \text{area4}, \text{area5}, \text{area6}\}) \\ .7 = ((A - B) \cup (A - C) = \{\text{area1}, \text{area2}, \text{area4}\}) \\ .8 = (A' \cup B' = \{\text{area1}, \text{area3}, \text{area4}, \text{area6}, \text{area7}, \text{area8}\}) \\ .9 = (B \cap (A - C)' = \{\text{area3}, \text{area5}, \text{area6}\}) \end{bmatrix}$$

$$\text{Ans4} = \left[\begin{array}{l} A \cup B = \{2, 4, 5, 6, 11, 13\} \\ A \cap B = \{5\} \\ A \cup B' = \{3, 5, 6, 7, 8, 9, 10, 11, 12, 14\} \\ B \cap A' = \{2, 4, 13\} \\ A - B = \{6, 11\} \\ B' - A = \{3, 7, 8, 9, 10, 12, 14\} \\ (A \cup B)' = \{3, 7, 8, 9, 10, 12, 14\} \\ A' \cap B' = \{3, 7, 8, 9, 10, 12, 14\} \\ (A - B)' = \{2, 3, 4, 5, 7, 8, 9, 10, 12, 13, 14\} \end{array} \right], \text{Ans5} = \left[\begin{array}{l} .1 = (B' = \{area1, area4\}) \\ .2 = (B - A = \{area3\}) \\ .3 = ((A - B) \cup (B - A) = \{area1, area3\}) \\ .4 = (C' = \{area1, area2, area3, area8\}) \\ .5 = (C \cup (A \cap B) = \{area2, area4, area5, area6, area7\}) \\ .6 = ((A \cup C) \cap (B \cup C) = \{area2, area4, area5, area6, area7\}) \\ .7 = ((B - A) \cup (B - C) = \{area2, area3, area6\}) \\ .8 = (B' - C' = \{area4, area7\}) \\ .9 = ((B - C)' - A = \{area6, area7, area8\}) \end{array} \right]$$

$$\text{Ans4} = \begin{bmatrix} A \cup B = \{4, 5, 9, 10, 12, 13, 14, 16, 17\} \\ A \cap B = \{13\} \\ A \cup B' = \{4, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16\} \\ B \cap A' = \{5, 10, 17\} \\ A - B = \{4, 9, 12, 14, 16\} \\ B' - A = \{6, 7, 8, 11, 15\} \\ (A \cup B)' = \{6, 7, 8, 11, 15\} \\ A' \cap B' = \{6, 7, 8, 11, 15\} \\ (A - B)' = \{5, 6, 7, 8, 10, 11, 13, 15, 17\} \end{bmatrix}, \quad \text{Ans5} = \begin{bmatrix} .1 = (A' = \{area3, area4\}) \\ .2 = (B - A' = \{area2\}) \\ .3 = (A' \cap B' = \{area4\}) \\ .4 = (A \cup B = \{area1, area2, area3, area4, area5, area6\}) \\ .5 = (C \cup (A \cap B) = \{area2, area4, area5, area6, area7\}) \\ .6 = ((A \cup C) \cap (B \cup C) = \{area2, area4, area5, area6, area7\}) \\ .7 = ((A - B) \cup (A - C) = \{area1, area2, area4\}) \\ .8 = (B' - C' = \{area4, area7\}) \\ .9 = (C \cap (A - B)' = \{area5, area6, area7\}) \end{bmatrix}$$

$$\text{Ans4} = \begin{bmatrix} A \cup B = \{5, 6, 7, 8, 9, 11, 14, 15\} \\ A \cap B = \{6, 7, 11\} \\ A \cup B' = \{4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 16\} \\ B \cap A' = \{9, 15\} \\ A - B = \{5, 8, 14\} \\ B' - A = \{4, 10, 12, 13, 16\} \\ (A \cup B)' = \{4, 10, 12, 13, 16\} \\ A' \cap B' = \{4, 10, 12, 13, 16\} \\ (A - B)' = \{4, 6, 7, 9, 10, 11, 12, 13, 15, 16\} \end{bmatrix}, \quad \text{Ans5} = \begin{bmatrix} .1 = (B' = \{area1, area4\}) \\ .2 = (A' - B = \{area4\}) \\ .3 = ((A - B) \cap (B - A) = \{\}) \\ .4 = (A' = \{area3, area6, area7, area8\}) \\ .5 = (C \cup (A \cap B) = \{area2, area4, area5, area6, area7\}) \\ .6 = ((A \cup C) \cap (B \cup C) = \{area2, area4, area5, area6, area7\}) \\ .7 = ((B - A) \cap (B - C) = \{area3\}) \\ .8 = (B' \cup C' = \{area1, area2, area3, area4, area7, area8\}) \\ .9 = (C \cap (B - A)' = \{area4, area5, area7\}) \end{bmatrix}$$

$$\text{Ans4} = \begin{bmatrix} A \cup B = \{1, 2, 3, 6, 8, 9, 10, 11\} \\ A \cap B = \{3, 8\} \\ A \cup B' = \{3, 4, 5, 7, 8, 9, 11\} \\ B \cap A' = \{1, 2, 6, 10\} \\ A - B = \{9, 11\} \\ B' - A = \{4, 5, 7\} \\ (A \cup B)' = \{4, 5, 7\} \\ A' \cap B' = \{4, 5, 7\} \\ (A - B)' = \{1, 2, 3, 4, 5, 6, 7, 8, 10\} \end{bmatrix}, \text{ Ans5} = \begin{bmatrix} .1 = (B' = \{area1, area4\}) \\ .2 = (A - B = \{area1\}) \\ .3 = ((A \cap B)' = \{area1, area3, area4\}) \\ .4 = (A \cup C = \{area1, area2, area4, area5, area6, area7\}) \\ .5 = (C \cup (A \cap B) = \{area2, area4, area5, area6, area7\}) \\ .6 = ((A \cup C) \cap (B \cup C) = \{area2, area4, area5, area6, area7\}) \\ .7 = ((C - A) \cup (C - B) = \{area4, area6, area7\}) \\ .8 = (A' \cap C' = \{area3, area8\}) \\ .9 = (A' \cap (B - C)' = \{area6, area7, area8\}) \end{bmatrix}$$

$$\begin{aligned}
Ans1 &= \left[.I = \begin{bmatrix} area1 = \{5, 6\} \\ area2 = \{7, 9, 11\} \\ area3 = \{4, 10, 12\} \\ area4 = \{2, 3, 8, 13\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 3 & n(A \cup B) = 8 \\ n(A - B) = 2 & n(U - (A \cup B)) = 4 \\ n(B - A) = 3 & Math@MUT \end{bmatrix} \right] \\
Ans2 &= \left[.I = \begin{bmatrix} area1 = \{3, 4, 5, 7, 16\} \\ area2 = \{15\} \\ area3 = \{8, 9, 12\} \\ area4 = \{6, 10, 11, 13, 14\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 1 & n(A \cup B) = 9 \\ n(A - B) = 5 & n(U - (A \cup B)) = 5 \\ n(B - A) = 3 & Math@MUT \end{bmatrix} \right] \\
Ans3 &= \left[.I = \begin{bmatrix} area1 = \{ \} \\ area2 = \{5, 9\} \\ area3 = \{1, 2\} \\ area4 = \{11\} \\ area5 = \{0, 12\} \\ area6 = \{4\} \\ area7 = \{6, 7\} \\ area8 = \{3, 8, 10\} \end{bmatrix}, .2 = \begin{bmatrix} n(intersect(A, B, C)) = 2 & n(A - B) = 1 \\ n(union(A, B, C)) = 10 & n(B - A) = 3 \\ n(A \cap B) = 4 & n(C \cap (A \cup B)) = 4 \\ n(B \cap C) = 3 & n(C \cup (A \cap B)) = 8 \\ n(A \cup C) = 8 & n(intersect(A, B, C)') = 11 \\ n(B \cup C) = 10 & Math@MUT \end{bmatrix} \right] \\
Ans4 &= \left[\begin{aligned} A \cup B &= \{1, 2, 5, 7, 8, 9, 10, 11\} \\ A \cap B &= \{9, 10\} \\ A \cup B' &= \{0, 2, 3, 4, 5, 6, 9, 10\} \\ B \cap A' &= \{1, 7, 8, 11\} \\ A - B &= \{2, 5\} \\ B' - A &= \{0, 3, 4, 6\} \\ (A \cup B)' &= \{0, 3, 4, 6\} \\ A' \cap B' &= \{0, 3, 4, 6\} \\ (A - B)' &= \{0, 1, 3, 4, 6, 7, 8, 9, 10, 11\} \end{aligned} \right], Ans5 &= \left[\begin{aligned} .I &= (B' = \{area1, area4\}) \\ .2 &= (A' - B = \{area4\}) \\ .3 &= (A' \cup B' = \{area1, area3, area4\}) \\ .4 &= (B \cap C = \{area5, area6\}) \\ .5 &= (B \cap (A \cup C) = \{area2, area5, area6\}) \\ .6 &= ((A \cap B) \cup (B \cap C) = \{area2, area5, area6\}) \\ .7 &= ((A - B) \cup (A - C) = \{area1, area2, area4\}) \\ .8 &= (C' - A' = \{area1, area2\}) \\ .9 &= ((A - C)' - B = \{area4, area7, area8\}) \end{aligned} \right]
\end{aligned}$$

$$\text{Ans4} = \begin{bmatrix} A \cup B = \{1, 3, 4, 5, 6, 7, 9, 10, 11\} \\ A \cap B = \{ \} \\ A \cup B' = \{1, 2, 3, 6, 8, 9, 10\} \\ B \cap A' = \{4, 5, 7, 11\} \\ A - B = \{1, 3, 6, 9, 10\} \\ B' - A = \{2, 8\} \\ (A \cup B)' = \{2, 8\} \\ A' \cap B' = \{2, 8\} \\ (A - B)' = \{2, 4, 5, 7, 8, 11\} \end{bmatrix}, \text{ Ans5} = \begin{bmatrix} .1 = (A \cap B = \{area2\}) \\ .2 = (B' - A' = \{area1\}) \\ .3 = ((A - B) \cap (B - A) = \{ \}) \\ .4 = (C' = \{area1, area2, area3, area8\}) \\ .5 = (C \cap (A \cup B) = \{area4, area5, area6\}) \\ .6 = ((A \cap C) \cup (B \cap C) = \{area4, area5, area6\}) \\ .7 = ((C - A) \cup (C - B) = \{area4, area6, area7\}) \\ .8 = (B' \cup C' = \{area1, area2, area3, area4, area7, area8\}) \\ .9 = (B' \cap (A - C)' = \{area4, area7, area8\}) \end{bmatrix}$$

$$\begin{aligned}
Ans1 &= \left[.1 = \begin{bmatrix} area1 = \{2, 4, 6, 7, 8\} \\ area2 = \{5\} \\ area3 = \{9, 10\} \\ area4 = \{1, 3, 11\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 1 & n(A \cup B) = 8 \\ n(A - B) = 5 & n(U - (A \cup B)) = 3 \\ n(B - A) = 2 & Math@MUT \end{bmatrix} \right] \\
Ans2 &= \left[.1 = \begin{bmatrix} area1 = \{1, 2, 5, 7, 10, 12\} \\ area2 = \{ \} \\ area3 = \{3, 6, 9, 11, 13\} \\ area4 = \{0, 4, 8\} \end{bmatrix}, .2 = \begin{bmatrix} n(A \cap B) = 0 & n(A \cup B) = 11 \\ n(A - B) = 6 & n(U - (A \cup B)) = 3 \\ n(B - A) = 5 & Math@MUT \end{bmatrix} \right] \\
Ans3 &= \left[.1 = \begin{bmatrix} area1 = \{7\} \\ area2 = \{1, 5, 13\} \\ area3 = \{3, 8, 11, 16\} \\ area4 = \{15\} \\ area5 = \{ \} \\ area6 = \{ \} \\ area7 = \{10, 12, 14\} \\ area8 = \{2, 4, 6, 9\} \end{bmatrix}, .2 = \begin{bmatrix} n(intersect(A, B, C)) = 0 & n(A - B) = 2 \\ n(union(A, B, C)) = 12 & n(B - A) = 4 \\ n(A \cap B) = 3 & n(C \cap (A \cup B)) = 1 \\ n(B \cap C) = 0 & n(C \cup (A \cap B)) = 7 \\ n(A \cup C) = 8 & n(intersect(A, B, C)) = 16 \\ n(B \cup C) = 11 & Math@MUT \end{bmatrix} \right] \\
Ans4 &= \left[\begin{aligned} A \cup B &= \{2, 3, 6, 7, 8, 9, 10, 12\} \\ A \cap B &= \{2, 7, 8, 9, 10\} \\ A \cup B' &= \{2, 4, 5, 6, 7, 8, 9, 10, 11\} \\ B \cap A' &= \{3, 12\} \\ A - B &= \{6\} \\ B' - A &= \{4, 5, 11\} \\ (A \cup B)' &= \{4, 5, 11\} \\ A' \cap B' &= \{4, 5, 11\} \\ (A - B)' &= \{2, 3, 4, 5, 7, 8, 9, 10, 11, 12\} \end{aligned} \right], Ans5 &= \left[\begin{aligned} .1 &= (B' = \{area1, area4\}) \\ .2 &= (B - A' = \{area2\}) \\ .3 &= (A' \cap B' = \{area4\}) \\ .4 &= (A \cup C = \{area1, area2, area4, area5, area6, area7\}) \\ .5 &= (A \cap (B \cup C) = \{area2, area4, area5\}) \\ .6 &= ((A \cap B) \cup (A \cap C) = \{area2, area4, area5\}) \\ .7 &= ((A - B) \cup (A - C) = \{area1, area2, area4\}) \\ .8 &= (A' - B' = \{area3, area6\}) \\ .9 &= ((C - A)' - B = \{area1, area4, area8\}) \end{aligned} \right]
\end{aligned}$$

$$\text{Ans4} = \left[\begin{array}{l} A \cup B = \{1, 3, 4, 5, 7, 8, 10, 11\} \\ A \cap B = \{7, 10\} \\ A \cup B' = \{0, 2, 6, 7, 9, 10, 11, 12\} \\ B \cap A' = \{1, 3, 4, 5, 8\} \\ A - B = \{11\} \\ B' - A = \{0, 2, 6, 9, 12\} \\ (A \cup B)' = \{0, 2, 6, 9, 12\} \\ A' \cap B' = \{0, 2, 6, 9, 12\} \\ (A - B)' = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12\} \end{array} \right], \text{Ans5} = \left[\begin{array}{l} .1 = (A \cup B = \{\text{area1}, \text{area2}, \text{area3}\}) \\ .2 = (A - B = \{\text{area1}\}) \\ .3 = ((A \cap B)' = \{\text{area1}, \text{area3}, \text{area4}\}) \\ .4 = (A \cap C = \{\text{area4}, \text{area5}\}) \\ .5 = (B \cup (A \cap C) = \{\text{area2}, \text{area3}, \text{area4}, \text{area5}, \text{area6}\}) \\ .6 = ((A \cup B) \cap (B \cup C) = \{\text{area2}, \text{area3}, \text{area4}, \text{area5}, \text{area6}\}) \\ .7 = ((B - A) \cap (B - C) = \{\text{area3}\}) \\ .8 = (B' \cup C' = \{\text{area1}, \text{area2}, \text{area3}, \text{area4}, \text{area7}, \text{area8}\}) \\ .9 = ((C - A)' - B' = \{\text{area2}, \text{area3}, \text{area5}\}) \end{array} \right]$$

[illegible]