

Quiz 12

$$1. (a) |A_1 \cup A_2| = |A_1| + |A_2| - |A_1 \cap A_2| \\ = 10 + 10 - 6 = 14$$

$$(b) |A_2 \cup A_3| = |A_2| + |A_3| - |A_2 \cap A_3| \\ = 10 + 15 - 4 = 21$$

$$(c) |A_1 \cup A_3| = |A_1| + |A_3| - |A_1 \cap A_3| = \\ 10 + 15 - 5 = 20$$

$$(d) |A_1 \cup A_2 \cup A_3| = |A_1| + |A_2| + |A_3| - \\ |A_1 \cap A_2| - |A_1 \cap A_3| - |A_2 \cap A_3| + |A_1 \cap A_2 \cap A_3| \\ = 10 + 10 + 15 - 6 - 5 - 4 + 3 \\ = 35 - 15 + 3 = 23$$