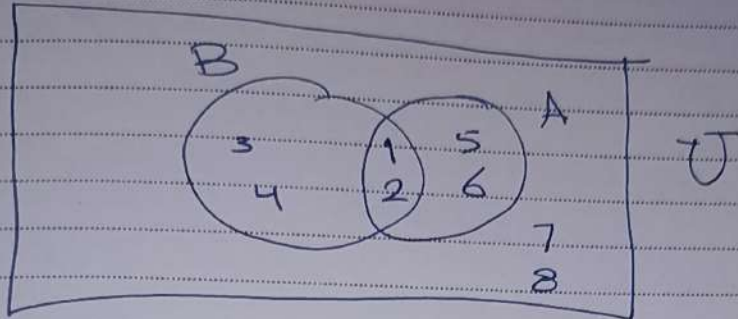




لا يكتب في
هذا الهامش

Q3



Example

So, $U = \{1, 2, \dots, 8\}$

$$A = \{1, 2, 5, 6\}$$

$$B = \{3, 4, 7, 8\}$$

$$|A \cap B| = 2, |A - B| = |B - A| = 2$$

$$\text{and } |\overline{A \cup B}| = |U| - |A \cup B| \\ = 8 - 6 = 2$$



الاجابة النموذجية Quiz (1)

Q1. $P(A) = \{ \emptyset, A, \{0\}, \{\{0\}\} \}$
 $|P(A)| = 2^2 = 4$

Q2. (a) False

Example: Let $A = \{1\}$ so $P(A) = \{ \emptyset, \{1\} \}$

Now, $\{1\} \in P(A)$ and $1 \in A$.

(b) True

The possible subsets of size 2
(of two elements) from $\{1, 2, 3\}$. They are
 $S_1 = \{1, 2\}$, $S_2 = \{1, 3\}$, $S_3 = \{2, 3\}$.

That's only 3 distinct subsets of
two elements.

So, by "Pigeonhole Principle"

We have four sets A, B, C, D each
equal to one of S_1, S_2, S_3 - ie two sets
of four sets are equal.

Quiz (1)

Q₁: Find $P(A)$ For $A = \{0, \{0\}\}$

Q₂: Determine whether the following statements are true or false

a) IF $\{1\} \in P(A)$, then $1 \in A$ but $\{1\} \notin A$

b) IF four sets A, B, C, D are subsets of $\{1, 2, 3\}$ such that $|A| = |B| = |C| = |D| = 2$, Then at least two of these are equal.

Q₃: Give an example of a universal set U , two sets A and B and accompanying Venn diagram such that $|A \cap B| = |B - A| = |A - B| = |\overline{A \cup B}| = 2$