

Quiz 1 Solution

- 1 T
- 2 T
- 3 C
- 4 A, B, C, D
- 5 A, B, C
- 6 C
- 7 A, B
- 8 A, B, C
- 9 B
- 10 C
- 11 A
- 12 B
- 13 A, B, C
- 14 B
- 15 Formal languages, Automata theory, Computability, Complexity
- 16 A collection of ordered objects
- 17 A and B are equal if they have the same elements.
Or
A = B if $A \subseteq B$ and $B \subseteq A$
- 18 $\{\phi, \{x\}, \{y\}, \{z\}, \{x, y\}, \{x, z\}, \{y, z\}, \{x, y, z\}\}$
- 19 $\{(q_0, a), (q_0, b), (q_0, \lambda), (q_1, a), (q_1, b), (q_1, \lambda)\}$
- 20 We know $w^{n+1} = w^n w = w w^n$
If $n = 0$, then $w^1 = w^0 w = w w^0$
But we know $w = \lambda w = w \lambda$
So, $w^0 = \lambda$
- 21 $\{\lambda, a, b, c, aa, bb, cc, ab, ba, ac, ca, bc, cb, \dots\}$
- 22

Identity	Result
$A \cup \phi =$	A
$A \cap U =$	A
$A \cup U =$	U
$A \cap \phi =$	ϕ
$A \cup A =$	A
$A \cap A =$	A
$A \cup \bar{A} =$	U
$A \cap \bar{A} =$	ϕ
$\bar{\bar{A}} =$	A