

Practice Exam 1
Website

1.
 1. Write the following set using set-builder notation $\{1, 3, 5, 7, \dots\}$.
 2. List the elements of the following set $\{x : x^2 - 4 = 0\}$.
1. Written Solution
 2. Video Solution
2. Let $A = \{1, 2, 4, 5, 7\}$, $B = \{2, 5, 6, 7, 8\}$, $C = \{1, 5, 7, 8\}$. and $U = \{x \in \mathbb{N} : x \leq 10\}$. Then draw a venn-diagram for A, B and C putting each of the elements of U in the appropriate region of the venn-diagram.
1. Written Solution
 2. Video Solution
3. Let $A = \{a, b, c\}$ and $B = \{b, c, d\}$. Then find
 1. $A \cap B$
 2. $(A - B) \times B$
 3. $\mathcal{P}(A)$
 4. $\mathcal{P}(A - B) \times \mathcal{P}(B - A)$.
 5. What is $|\mathcal{P}(A) \times B|$.
1. Written Solution
 2. Video Solution
4. Let P and Q be the logical statements given by $P = p \vee (q \rightarrow r)$ and $Q = (p \vee q) \wedge r$. Then use a truth table to determine if P implies Q , Q implies P , $P \equiv Q$ or none of the above are true.
1. Written Solution
 2. Video Solution

5. Write the following statement using symbolic logic. Then give the negation of the statement symbolically. Finally, give this negation as a sentence.

Theorem 1. *Everyone who is sane can do logic. None of your sons can do logic. (Lewis Carroll).*

1. Write symbolically
 2. Write the symbolic negation.
 3. Write the negation as a sentence.
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1. Written Solution
 2. Video Solution