1 | Sets, Venn, Factorizing & Prime Factor

1) Consider the universal set U={1,2,3,4,5,6,7,8,9,10} and subsets A={1,3,5,7,9} and B={2,4,6,8,10}. Create a Venn diagram to represent these sets and answer the following questions:

a) Determine $A \cap B$ and represent it in the Venn diagram.

b) Find $A \cup B$ and represent it in the Venn diagram.

(5)

2) Do the following questions.

a) Express the number 90 as the product of its prime factors.

b) Find the HCF of 48 and 72.

c) Determine the LCM of 18 and 24.

(4)

3) Consider the universal set U={1,2,3,4,5,6,7,8,9,10} and sets A={1,2,3,4,5} and B={4,5,6,7,8}. Answer the following questions:

a) Determine $A \cap B$ and $A \cup B$.

b) Find the complement of set A with respect to U.

c) Define the C={2,4,6,8,10}. Determine if C is a subset of A.

(5)

4) Do the following questions

a) Express the number 72 as the product of its prime factors.

b) Find the Highest Common Factor (HCF) of 84 and 126.

c) Determine the Lowest Common Multiple (LCM) of 15 and 20.

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(4)

5) Factorize the following quadratic expression completely:

$4x^2+12x+8$

(2)