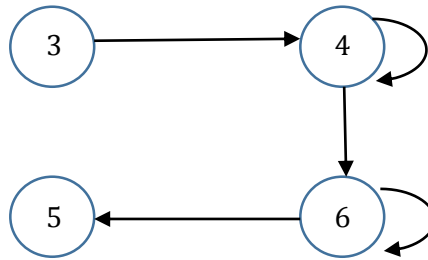


DBM2033 DISCRETE MATHEMATICS
REVISION SET 1

1. Construct the truth table of each of the following proposition.
 - (a) $q \vee r \wedge \sim p$
 - (b) $(p \rightarrow q) \wedge (q \rightarrow r) \vee \sim r$
2. Based on the following figure, explain whether the relation R is equivalent or not on a set $\{3, 4, 5, 6\}$.



3. Given the set $\xi = \{x | 20 \leq x \leq 30\}$, $K = \{\text{the number that end with 1, 7 or 9}\}$, $M = \{\text{multiple of 3}\}$ and $N = \{\text{factor of 200}\}$.
 - (a) Write set K , M , and N by listing their elements.
 - (b) Draw the Venn diagram to represent the above set.
 - (c) Write each of the following set by listing their elements.
 - (i) $(K \cup M') \cap N$
 - (ii) $(M - K)' \cup N$
 - (iii) $(M \cup K) - (N \cup K)$
4. Let p denote "He is rich" and q denote "He is happy". Write each statement in symbolic form using p and q .
 - (a) If he is rich, then he is unhappy.
 - (b) He is neither rich nor happy.
 - (c) It is necessary to be poor in order to be happy.
 - (d) He is unhappy if and only if he is poor.
 - (e) To be poor is to be unhappy.