

# CSE 103: BOOK- DISCRETE MATHEMATICS AND IT'S APPLICATIONS BY ROSEN : SECTION 1.1 PROBLEM NO 7(ACCORDING TO FORMULA)

## QUESTION :

Suppose that during the most recent fiscal year, the annual revenue of Acme Computer was 138 billion dollars

and its net profit was 8 billion dollars, the annual revenue of Nadir Software was 87 billion dollars and its net profit was 5 billion dollars, and the annual revenue of Quixote Media was 111 billion dollars and its net profit was 13 billion dollars. Determine the truth value of each of these propositions for the most recent fiscal year.

- a) Quixote Media had the largest annual revenue.
- b) Nadir Software had the lowest net profit and Acme Computer had the largest annual revenue.
- c) Acme Computer had the largest net profit or Quixote Media had the largest net profit.
- d) If Quixote Media had the smallest net profit, then Acme Computer had the largest annual revenue.
- e) Nadir Software had the smallest net profit if and only if Acme Computer had the largest annual revenue.

## ANSWER :

COMPANY	ANNUAL REVENUE	NET PROFIT
ACME COMPUTER	138B	8B
NADIR SOFTWARE	87B	5B
QUIXOTE MEDIA	111B	13B

	PROPOSITION	NOTATION	TRUTH VALUE
A	Quixote Media had the largest annual revenue.	$\neg Q$	<b>F</b>
B	Nadir Software had the lowest net profit and Acme Computer had the largest annual revenue.	$N \wedge A$	<b>T</b>
C	Acme Computer had the largest net profit or Quixote Media had the largest net profit.	$A \vee q$	<b>T</b>
D	If Quixote Media had the largest net profit then Acme Computer had the largest annual revenue.	$q \rightarrow A$	<b>T</b>
E	Nadir Soft. had the smallest net profit if and only if Acme computer had the largest annual revenue.	$N \leftrightarrow A$	<b>T</b>