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Chapter AA, Problem 1E   46 Bookmarks   Show all steps: **ON**

Problem

Prove the following:

If $A \subseteq B$ and $B \subseteq C$, then $A \subseteq C$.

Step-by-step solution

Step 1 of 2

Objective:-

The objective is to prove $A \subseteq B$ and $B \subseteq C$, then $A \subseteq C$.

Comment

Step 2 of 2

Proof:-

Let A and B are two sets. Let $x \in A \subseteq B$.

If sets A and B are such that every elements of A are also elements of B, then A is said to be subset of B.

$$A \subseteq B \Leftrightarrow \{x \in A \Rightarrow x \in B\}$$

So,

$$x \in A \Rightarrow x \in B \qquad \text{......(1)}$$

Let us suppose $x \in B \subseteq C$.

So,

$$x \in B \Rightarrow x \in C \qquad \text{......(2)}$$

Let us consider the equation (1) and (2).

$$x \in B \Rightarrow x \in C$$

By definition:-

$A \subseteq C$

Proved

Comment