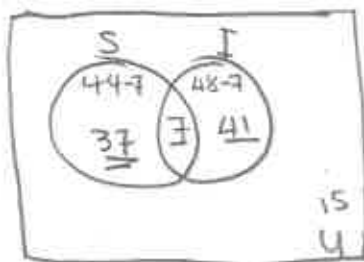


Example 3

On a hot afternoon, 100 people purchased items from a refreshment stand. The items purchased are shown in the table at right.

Draw a Venn diagram to represent this situation and provide the requested information.

Item	Number of People
Soft Drink	44
Ice cream	48
Neither	15



$$\begin{aligned}
 n(U) &= 100 \\
 n(S) &= 44 \\
 n(I) &= 48 \\
 n(S \cap I) &= 7 \\
 n(S \cup I) &= 85 \quad (100 - 15) \\
 n(S \setminus I) &= 37 \quad (44 - 7) \\
 n(I \setminus S) &= 41 \quad (48 - 7)
 \end{aligned}$$

- a) The number of people who purchased both a soft drink and an ice cream. $n(S \cap I) = 7$
- b) The number of people who only purchased ice cream. $n(I \setminus S) = 41$
- c) The number of people who only purchased a soft drink. $n(S \setminus I) = 37$
- d) The number of people who purchased a soft drink or an ice cream. $n(S \cup I) = 85$

Example 4

Searching on Google for polo park mall gave over two million hits, but searching with quotation marks for "polo park mall" gave only over 21 thousand hits. One search is based on "or" and one search is based on "and". Which search is based on "and"? How do you know?



OR → gives more hits
 means search for each word.
 → hits for "polo"
 " " "park"
 " " "mall"

"and" - gives less hits
 - means searches linking
 two things.
 Ex "polo and park"