we're talking about a deck of cards

\[ P(Q) = \frac{1}{4} \quad P(A) = \frac{1}{13} \]

\[ x \text{ is cards that are both hearts and aces (that is, 1 card)} \]

\[ P(x) = \frac{1}{5} \]

\( Q \) is the set of heart cards. \( A \) is the set of ace cards. \( Q \cap A \) is the intersection of those 2 sets. \( Q \cup A \) is the union of those 2 sets.

\[ P(Q \cup A) = P(Q) + P(A) - P(Q \cap A) = \frac{1}{13} + \frac{1}{4} - \frac{1}{52} = \frac{16}{52} \]

This is boolean algebra, set theory.