Statements formed by combining two or more simple statements are called ***compound statements***.

Words called ***connectives*** are used to join simple statements to form a compound statement.
Connectives include words such as **and**, **or**, **if...then**, and **if and only if**.

**And** Statements

If p and q represent two simple statements, then **the compound statement "p and q" is symbolized by p ∧ q**.

- The compound statement formed by connecting statements with the word **and** is called a ***conjunction***.
- The symbol for *and* is ∧.

Example 1: Let p and q represent the following simple statements:
p: It is after 5 p.m.
q: They are working.

Write each compound statement below in symbolic form.

a. They are working and it is after 5 p.m.

b. It is not after 5 p.m. and they are working.

**TABLE 3.4** Common English Expressions for $p \wedge q$

| Symbolic Statement | English Statement | Example<br>*p*: It is after 5 P.M.<br>*q*: They are working. |
|---|---|---|
| $p \wedge q$ | $p$ and $q$. | It is after 5 P.M. and they are working. |
| $p \wedge q$ | $p$ but $q$. | It is after 5 P.M., but they are working. |
| $p \wedge q$ | $p$ yet $q$. | It is after 5 P.M., yet they are working. |
| $p \wedge q$ | $p$ nevertheless $q$. | It is after 5 P.M.; nevertheless, they are working. |

**Or** Statements

If p and q represent two simple statements, then the compound statement "p or q" means p or q or both.

- The compound statement formed by connecting statements with the word *or* is called a ***disjunction***.
- **The symbol for or is ∨.**
- We symbolize the **compound statement "p or q or both" by p ∨ q**.

| Exclusive means "one or the other, but not both" | Inclusive means "either or both" |
|---|---|

Example 2: Let p and q represent the following simple statements:
p: You graduate.
q: You satisfy the math requirement.

Write each compound statement below in symbolic form.

a. You graduate or you satisfy the math requirement.

b. You satisfy the math requirement or you do not graduate.