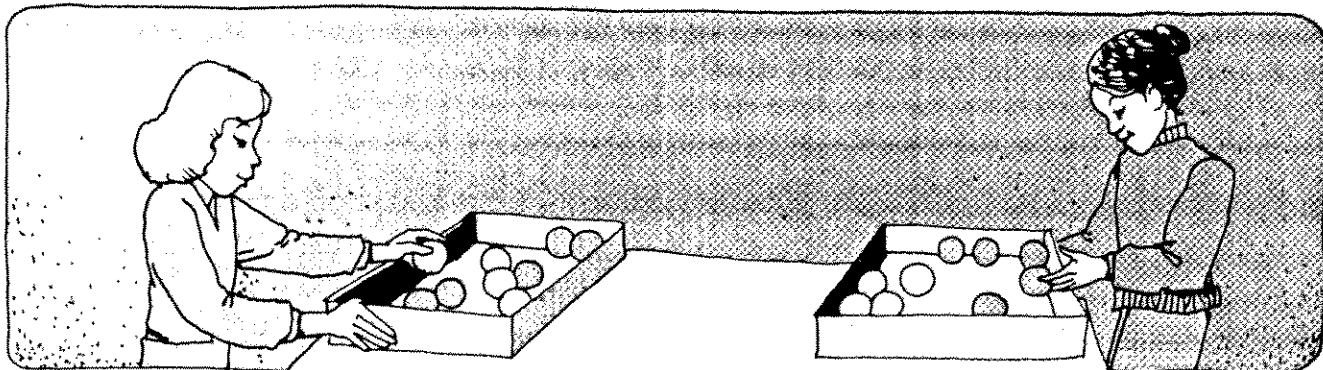


Properties of addition



When they finished, Mai Lee put her 3 red balls and 4 white balls in her tray with 2 gray balls. She said, "I have 3 red balls, 4 white balls, and 2 gray balls."

Tracey looked over and said, "I can add mine another way. My 4 white balls and 2 gray are 6. The 3 red plus that 6 are still 9."

$$\begin{array}{r} (3 + 4) + 2 = \\ 7 + 2 = \\ 9 \end{array}$$

$$\begin{array}{r} 3 + (4 + 2) = \\ 3 + 6 = \\ 9 \end{array}$$

The way in which addends are grouped does not change the sum. This is called the **associative property** of addition.

Use the associative property and complete the equations.

- | | |
|--|---|
| 1. $(6 + 2) + 8 = \underline{\quad} + \underline{\quad} = \underline{\quad}$ | 2. $8 + (2 + 4) = \underline{\quad} + \underline{\quad} = \underline{\quad}$ |
| $6 + (2 + 8) = \underline{\quad} + \underline{\quad} = \underline{\quad}$ | $(8 + 2) + 4 = \underline{\quad} + \underline{\quad} = \underline{\quad}$ |
| 3. $4 + (6 + 8) = \underline{\quad} + \underline{\quad} = \underline{\quad}$ | 4. $4 + (3 + 2) = \underline{\quad} + \underline{\quad} = \underline{\quad}$ |
| $(4 + 6) + 8 = \underline{\quad} + \underline{\quad} = \underline{\quad}$ | $(4 + 3) + 2 = \underline{\quad} + \underline{\quad} = \underline{\quad}$ |
| 5. $(4 + 3) + 7 = \underline{\quad} + \underline{\quad} = \underline{\quad}$ | 6. $(3 + 4) + 6 = \underline{\quad} + \underline{\quad} = \underline{\quad}$ |
| $4 + (3 + 7) = \underline{\quad} + \underline{\quad} = \underline{\quad}$ | $3 + (4 + 6) = \underline{\quad} + \underline{\quad} = \underline{\quad}$ |
| 7. $(6 + 3) + 7 = \underline{\quad} + \underline{\quad} = \underline{\quad}$ | 8. $(9 + 1) + 8 = \underline{\quad} + \underline{\quad} = \underline{\quad}$ |
| $6 + (3 + 7) = \underline{\quad} + \underline{\quad} = \underline{\quad}$ | $9 + (1 + 8) = \underline{\quad} + \underline{\quad} = \underline{\quad}$ |
| 9. $5 + (2 + 7) = \underline{\quad} + \underline{\quad} = \underline{\quad}$ | 10. $3 + (9 + 2) = \underline{\quad} + \underline{\quad} = \underline{\quad}$ |
| $(5 + 2) + 7 = \underline{\quad} + \underline{\quad} = \underline{\quad}$ | $(3 + 9) + 2 = \underline{\quad} + \underline{\quad} = \underline{\quad}$ |