We may purchase 10 books for $30.

When we want to solve an equation including one unknown variable, as x in the example above, we always aim at isolating the unknown variable. You can say that we put everything else on the other side of the equal sign. It is always a good idea to first isolate the terms including the variable from the constants to begin with as we did above by subtracting or adding before dividing or multiplying away the coefficient in front of the variable. As long as you do the same thing on both sides of the equal sign you can do whatever you want and in which order you want.

Above we began by subtracting the constant on both sides. We could have begun by dividing by 2 instead. It would have looked like

$$\frac{30}{2} = \frac{10 + 2x}{2}$$

$$\frac{30}{2} = \frac{10}{2} + \frac{2x}{2}$$

$$15 = 5 + x$$

$$15 - 5 = 5 + x - 5$$

$$10 = x$$

Again the same answer just proving the point.

If your equation contains like terms it is preferable to begin by combining the like terms before continuing solving the equation.

Example

$$\mathbf{5}x + \mathbf{14} + \mathbf{2}x + \mathbf{2} = \mathbf{30}$$

Begin by combining the like terms (all terms including the same variable x and all constants)

$$(5x + 2x) + (14 + 2) = 30$$

$$7x + 16 = 30$$

Now it's time to isolate the variable from the constant part. This is done by subtracting 16 from both sides

$$7x + 16 - 16 = 30 - 16$$

$$7x = 14$$

Divide both sides by 7 to isolate the variable

$$\frac{7x}{7} = \frac{14}{7}$$

$$x = 2$$

If you have an equation where you have variables on both sides you do basically the same thing as before. You collect all like terms. Before you have worked by first collecting all constant terms on one side and keep the variable terms on the other side.