System of equations

System with *align* (numbered)

$$x + 2y - z = 4 \tag{1}$$
$$x + y - 5z = -1 \tag{2}$$
$$2x - y + z = 10 \tag{3}$$

System with *align* (numbered) and *subequations*

$$x + 2y - z = 4 \tag{4a}$$
$$x + y - 5z = -1 \tag{4b}$$
$$2x - y + z = 10 \tag{4c}$$

System with *align** (unnumbered)

$$x + 2y - z = 4$$
$$x + y - 5z = -1$$
$$2x - y + z = 10$$

This environment can also be used to align equations on the same line:

$$f(x) = ax^2 + bx + c \qquad g(x) = dx^3$$
$$f'(x) = 2ax + b \qquad g'(x) = 3dx^2$$

Braces with *aligned*

The environment *aligned* is similar to align, to be used inside another mathematics environment.

$$\left(\begin{aligned} x + 2y - z &= 4 \\ x + y - 5z &= -1 \\ 2x - y + z &= 10 \end{aligned}\right)$$

$$\left\{\begin{aligned} x + 2y - z &= 4 \\ x + y - 5z &= -1 \\ 2x - y + z &= 10 \end{aligned}\right.$$

System with *array*

The environment *array* is for more advanced scenario. It is basically the same as *align*, but the columns and their alignment are explicitly indicated. It must be used in the math mode.

$$\left\{\begin{array}{rcl} x+z & = & y-4 \\ 5z & = & x+y-1 \\ 2x-y & = & 10-y \end{array}\right.$$