$$Out[16] = \{\{\{0, 0\}, \{0, 1\}\}\}\$$

In[17]:= byfirsts[3]

$$Out \, [17] = \, \left\{ \left\{ \left\{-1\,,\,\, 2\,+\,\frac{1}{v}\right\},\,\, \left\{-1\,,\,\, 2\right\},\,\, \left\{-1\,,\,\, 2\,+\,\frac{1}{v}\,+\,y\right\},\,\, \left\{-1\,,\,\, 2\,+\,y\right\} \right\},\,\, \left\{\left\{0\,,\,\,0\right\},\,\, \left\{0\,,\,\,1\right\},\,\, \left\{0\,,\,\,2\right\} \right\} \right\}$$

In[18]:= byfirsts[4]

Out
$$(18)$$
 = $\left\{\left\{-2, 3 + \frac{2}{y}\right\}, \left\{-2, 3 + \frac{1}{y}\right\}, \left\{-2, 3\right\}, \left\{-2, 3 + \frac{2}{y} + y\right\}, \left\{-2, 3 + \frac{1}{y} + y\right\}, \left\{-2, 3 + y\right\}, \left\{-2, 3 + \frac{2}{y} + 2y\right\}, \left\{-2, 3 + \frac{1}{y} + 2y\right\}, \left\{-2, 3 + 2y\right\}\right\}, \left\{\left\{-1, 2 + \frac{1}{y}\right\}, \left\{-1, 2\right\}, \left\{-1, 3 + \frac{1}{y}\right\}, \left\{-1, 3\right\}, \left\{-1, 2 + \frac{1}{y} + y\right\}, \left\{-1, 2 + y\right\}, \left\{-1, 3 + \frac{1}{y} + y\right\}, \left\{-1, 3 + y\right\}\right\}, \left\{\left\{0, 0\right\}, \left\{0, 1\right\}, \left\{0, 2\right\}, \left\{0, 3\right\}\right\}, \left\{\left\{-2 - \frac{1}{x}, 3 + \frac{1}{y^2} + \frac{2}{y}\right\}, \left\{-2 - \frac{1}{x}, 3 + \frac{2}{y^2} + \frac{2}{y} + y\right\}, \left\{-2 - \frac{1}{x}, 3 + \frac{2}{y} + 2y\right\}, \left\{-2 - \frac{1}{x}, 3 + \frac{2}{y} + 2y\right\}\right\}, \left\{\left\{-2 - x, 3 + \frac{2}{y} + 2y\right\}, \left\{-2 - x, 3 + \frac{2}{y} + 2y\right\}, \left\{-2 - x, 3 + 2y + y^2\right\}\right\}, \left\{\left\{-2 - x, 3 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - x, 3 + \frac{1}{y} + 2y + y^2\right\}, \left\{-2 - x, 3 + 2y + y^2\right\}\right\}, \left\{\left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{1}{y^2} + \frac{2}{y} + 2y\right\}, \left\{-2 - \frac{1}{x} - x, 3 + \frac{2}{y} + 2y\right\}, \left\{-2 - \frac{1}{x} - x, 3 + \frac{2}{y} + 2y\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{1}{y^2} + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 3 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x} - x, 4 + \frac{2}{y} + 2y + y^2\right\}, \left\{-2 - \frac{1}{x$

In[19]:= byfirsts[5]

$$\begin{aligned} & \text{Out} \, \{ \left\{ \left\{ -3 \,,\, 4 \,+\, \frac{2}{y} \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{3}{y} \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{2}{y} \,+\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{3}{y} \,+\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{3}{y} \,+\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{3}{y} \,+\, 2\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 2\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 2\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 2\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 2\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 3\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{3}{y} \,+\, 2\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 3\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, 3\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 3\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, 3\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 3\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 3\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 2\, y \right\},\,\, \left\{ -3 \,,\, 4 \,+\, \frac{1}{y} \,+\, 2\, y \right\},\,\, \left\{ -2 \,,\, 3 \,+\, \frac{1}{y} \,+\, y \right\},\,\, \left\{ -2 \,,\, 4 \,+\, \frac{1}{y} \,+\, y \right\},\,\, \left\{ -2 \,,\, 4 \,+\, \frac{2}{y} \,+\, 2\, y \right\},\,\, \left\{ -2 \,,\, 4 \,+\, \frac{1}{y} \,+\, y \right\},\,\, \left\{ -2 \,,\, 4 \,+\, \frac{2}{y} \,+\, 2\, y \right\},\,\, \left\{ -2 \,,\, 3 \,+\, 2\, y \right\},\,\, \left\{ -2 \,,\, 3 \,+\, 2\, y \right\},\,\, \left\{ -2 \,,\, 4 \,+\, 2\,$$

$$\left\{ -3 - \frac{2}{x}, 4 + \frac{2}{y^2} + \frac{3}{y} + 2y \right\}, \left\{ -3 - \frac{2}{x}, 4 + \frac{3}{y} + 2y \right\}, \left\{ -3 - \frac{2}{x}, 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \left\{ -3 - \frac{2}{x}, 4 + \frac{1}{y^2} + \frac{3}{y} + 3y \right\}, \left\{ -3 - \frac{2}{x}, 4 + \frac{3}{y} + 3y \right\}, \left\{ -3 - \frac{2}{x}, 4 + \frac{1}{y^2} + \frac{3}{y} + 3y \right\}, \left\{ -3 - \frac{2}{x^2}, 4 + \frac{1}{y^2} + \frac{3}{y} + 3y \right\}, \left\{ -3 - \frac{1}{x^2} - \frac{2}{x}, 4 + \frac{1}{y^2} + \frac{3}{y} + 3y \right\}, \left\{ -3 - \frac{1}{x^2} - \frac{2}{x}, 4 + \frac{1}{y^2} + \frac{3}{y} + y \right\}, \left\{ -3 - \frac{1}{x^2} - \frac{2}{x}, 4 + \frac{2}{y^2} + \frac{3}{y} + y \right\}, \left\{ -3 - \frac{1}{x^2} - \frac{2}{x}, 4 + \frac{2}{y^2} + \frac{3}{y} + y \right\}, \left\{ -3 - \frac{1}{x^2} - \frac{2}{x}, 4 + \frac{2}{y^2} + \frac{3}{y} + 2y \right\}, \left\{ -3 - \frac{1}{x^2} - \frac{2}{x}, 4 + \frac{2}{y^2} + \frac{3}{y} + 2y \right\}, \left\{ -3 - \frac{1}{x^2} - \frac{2}{x}, 4 + \frac{2}{y^2} + \frac{3}{y} + 2y \right\}, \left\{ -3 - \frac{1}{x}, 4 + \frac{3}{y} + \frac{3}{y} + \frac{3}{y} + \frac{3}{y} \right\}, \left\{ -3 - \frac{1}{x}, 4 + \frac{3}{y} + \frac{3}{y} + \frac{3}{y} \right\}, \left\{ -3 - \frac{1}{x}, 4 + \frac{1}{y^3} + \frac{3}{y} + \frac{3}{y} \right\}, \left\{ -3 - \frac{1}{x}, 4 + \frac{3}{y} + \frac{3}{y} + \frac{3}{y} \right\}, \left\{ -3 - \frac{1}{x}, 4 + \frac{3}{y} + \frac{3}{y} + \frac{3}{y} \right\}, \left\{ -3 - \frac{1}{x}, 4 + \frac{3}{y} + 2y \right\}, \left\{ -3 - \frac{1}{x}, 4$$

$$\left\{ -3 - \frac{2}{x} - 2x, 4 + \frac{3}{y} + 3y + y^2 \right\}, \left\{ -3 - \frac{2}{x} - 2x, 4 + \frac{1}{y^2} + \frac{3}{y} + 3y + y^2 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x, 6 + \frac{3}{y} + 3y + y^3 \right\}, \left\{ -3 - \frac{2}{x} - 2x, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + y^3 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x, 6 + \frac{2}{y^2} + \frac{3}{y} + 3y + y^3 \right\}, \left\{ -3 - \frac{2}{x} - 2x, 4 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^3 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x, 4 + \frac{3}{y} + 3y + 2y^3 \right\}, \left\{ -3 - \frac{2}{x} - 2x, 4 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^3 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x, 5 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^3 \right\}, \left\{ -3 - \frac{2}{x} - 2x, 5 + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x, 5 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \left\{ -3 - \frac{2}{x} - 2x, 6 + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \left\{ -3 - \frac{2}{x} - 2x, 6 + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y} + 3y + y^2 \right\}, \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^2} + \frac{4}{y} + 3y \right\}, \\ \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y} + 3y + y^2 \right\}, \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y \right\}, \\ \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y} + 3y + y^2 \right\}, \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + y^3 \right\}, \\ \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y} + 3y + y^2 \right\}, \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + y^3 \right\}, \\ \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y} + 3y + y^2 \right\}, \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + y^2 \right\}, \\ \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y} + 3y + 2y^2 \right\}, \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - 2x, 6 + \frac{1}{y^3} + \frac{3}{y$$

$$\left\{ -3 - \frac{1}{x} - 2 \times x + \frac{1}{y^2} + \frac{3}{y} + 3 \cdot y + y^2 \right\}, \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{1}{y^2} + \frac{2}{y} + 3 \cdot y + y^2 \right\}, \\ \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{2}{y} + 3 \cdot y + 2 \cdot y^2 \right\}, \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{4}{y} + \frac{2}{y} + 3 \cdot y + 2 \cdot y^2 \right\}, \\ \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{1}{y^2} + \frac{2}{y} + 3 \cdot y + 2 \cdot y^2 \right\}, \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{4}{y^2} + \frac{2}{y} + 3 \cdot y + 2 \cdot y^2 \right\}, \\ \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{1}{y^2} + \frac{3}{y} + 3 \cdot y + 2 \cdot y^2 \right\}, \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{5}{y} + 3 \cdot y + 2 \cdot y^2 \right\}, \\ \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{5}{y} + 3 \cdot y + 2 \cdot y^2 \right\}, \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{1}{y^2} + \frac{2}{y} + 3 \cdot y + 2 \cdot y^2 \right\}, \\ \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{2}{y} + 3 \cdot y + 2 \cdot y^2 \right\}, \left\{ -3 - \frac{1}{x} - 2 \times x + \frac{4}{y} + 2 \cdot y \right\}, \\ \left\{ -3 - x + 4 - \frac{2}{y} + 2 \cdot y \right\}, \left\{ -3 - x + 4 - \frac{3}{y} + 2 \cdot y + 2 \cdot y \right\}, \\ \left\{ -3 - x + 4 - \frac{2}{y} + 2 \cdot y \right\}, \left\{ -3 - x + 4 - \frac{3}{y} + 2 \cdot y + 2 \cdot y \right\}, \\ \left\{ -3 - x + 4 - \frac{3}{y} + 3 \cdot y + 2 \cdot y \right\}, \left\{ -3 - x + 4 - \frac{4}{y} + 3 \cdot y + 2 \cdot y \right\}, \\ \left\{ -3 - x + 4 - \frac{1}{y} + 2 \cdot y + 2 \cdot y \right\}, \left\{ -3 - x + 4 - \frac{1}{y} + 3 \cdot y + 2 \cdot y \right\}, \\ \left\{ -3 - x + 4 - \frac{1}{y} + 2 \cdot y + 2 \cdot y \right\}, \left\{ -3 - x + 4 - \frac{1}{y} + 3 \cdot y + 2 \cdot y \right\}, \\ \left\{ -3 - x + 4 - \frac{1}{y} + 2 \cdot y + 2 \cdot y \right\}, \left\{ -3 - x + 4 - \frac{1}{y} + 2 \cdot y \right\}, \left\{ -3 - x + 4 - \frac{1}{y} + 3 \cdot y + 2 \cdot y \right\}, \\ \left\{ -2 - x + 4 - \frac{1}{y} + 2 \cdot y + 2 \cdot y \right\}, \left\{ -2 - x + 4 - \frac{1}{y} + 2 \cdot y \right\}, \left\{ -2 - x + 4 + 2 \cdot y + 2 \cdot y \right\}, \\ \left\{ -2 - x + 3 + \frac{2}{y} + 2 \cdot y + 2 \cdot y \right\}, \left\{ -2 - x + 3 + \frac{1}{y} + 2 \cdot y + 2 \cdot y \right\}, \left\{ -3 - \frac{2}{x} - x + 4 + \frac{1}{y} + 2 \cdot y + 2 \cdot y \right\}, \\ \left\{ -3 - \frac{2}{x} - x + 4 + \frac{2}{y} + 2 \cdot y + 2 \cdot y \right\}, \left\{ -3 - \frac{2}{x} - x + 4 + \frac{1}{y} + 2 \cdot y + 2 \cdot y \right\}, \\ \left\{ -3 - \frac{2}{x} - x + 4 + \frac{2}{y} + \frac{3}{y} + 2 \cdot y \right\}, \left\{ -3 - \frac{2}{x} - x + 4 + \frac{3}{y} + 2 \cdot y + 2 \cdot y \right\}, \\ \left\{ -3 - \frac{2}{x} - x + 4 + \frac{2}{y} + \frac{3}{y} + 2 \cdot y + 2 \cdot y \right\}, \left\{ -3 - \frac{2}{x} - x + 4 + \frac{3}{y} + 2 \cdot y + 2 \cdot y \right\}, \\ \left\{ -3 - \frac{2}{x} - x + 4 + \frac{2}{y} + \frac{3}{y} + 2 \cdot y + 2 \cdot y \right\}, \left\{ -3 - \frac{2}{x} - x + 4 + \frac{3}{y} + 2 \cdot y + 2 \cdot y \right\}, \\ \left\{ -3 - \frac{2}{$$

$$\left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - x, \ 4 + \frac{1}{y^2} + \frac{2}{y^2} + \frac{3}{y} + 2y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - x, \ 5 + \frac{1}{y^2} + \frac{2}{y^2} + \frac{3}{y} + 2y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - x, \ 5 + \frac{1}{y^3} + \frac{2}{y^2} + \frac{3}{y} + 2y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - x, \ 5 + \frac{2}{y^2} + \frac{3}{y} + 2y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - x, \ 5 + \frac{2}{y^2} + \frac{3}{y} + 3y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - x, \ 5 + \frac{2}{y^2} + \frac{3}{y} + 3y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - x, \ 4 + \frac{2}{y^2} + \frac{3}{y} + 3y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{2}{y^2} + \frac{3}{y} + 3y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{2}{y^2} + \frac{3}{y} + 3y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 5 + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 5 + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 5 + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 3y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 3y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 3y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 3y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 3y \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 2y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 5 + \frac{1}{y^2} + \frac{3}{y} + 2y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 5 + \frac{1}{y^2} + \frac{3}{y} + 2y + y^2 \right\}, \ \left\{ -3 - \frac{1}{x} - x, \ 5 + \frac{1}$$

$$\left\{ -4 - \frac{2}{x} - 2x - x^2, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \left\{ -4 - \frac{2}{x} - 2x - x^2, 6 + \frac{2}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -4 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 2y + 2y^2 + y^3 \right\}, \left\{ -4 - \frac{2}{x} - 2x - x^2, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \\ \left\{ -4 - \frac{2}{x} - 2x - x^2, 6 + \frac{2}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \left\{ -4 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 4y + 2y^2 + y^3 \right\}, \\ \left\{ -4 - \frac{2}{x} - 2x - x^2, 6 + \frac{2}{y^2} + \frac{3}{y} + 4y + 2y^2 + y^3 \right\}, \left\{ -4 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 4y + 2y^2 + y^3 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 4 + \frac{3}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \left\{ -3 - \frac{2}{x} - 2x - x^2, 4 + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 4 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \left\{ -3 - \frac{2}{x} - 2x - x^2, 5 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 \right\}, \left\{ -3 - \frac{2}{x} - 2x - x^2, 5 + \frac{2}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 \right\}, \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 \right\}, \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \\ \left\{ -3 - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x - x^2, 6 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \\ \left\{ -4 - \frac{1}{x^2} - \frac{2}{x} - 2x - x^2, 6 + \frac{1}{y^2} + \frac{3}{y} + 3y$$

$$\left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - 2x - x^2, \ 4 + \frac{1}{y^3} + \frac{2}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - 2x - x^2, \ 4 + \frac{2}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - 2x - x^2, \ 5 + \frac{1}{y^3} + \frac{2}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - 2x - x^2, \ 5 + \frac{2}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - 2x - x^2, \ 6 + \frac{1}{y^3} + \frac{2}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x^2} - \frac{2}{x} - 2x - x^2, \ 6 + \frac{2}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^2, \ 4 + \frac{2}{y} + 3y + 2y^2 \right\}, \ \left\{ -3 - \frac{1}{x} - 2x - x^2, \ 4 + \frac{3}{y} + 3y + 2y^2 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^2, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \ \left\{ -3 - \frac{1}{x} - 2x - x^2, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 \right\}, \ \left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{3}{y} + 3y + 2y^2 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{2}{y} + 3y + 2y^2 \right\}, \ \left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{1}{y^2} + \frac{2}{y} + 3y + 2y^2 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{2}{y} + 3y + 2y^2 + y^3 \right\}, \ \left\{ -3 - \frac{1}{x} - 2x - x^2, \ 4 + \frac{1}{y^2} + \frac{2}{y} + 3y + 2y^2 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^2, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \ \left\{ -3 - \frac{1}{x} - 2x - x^2, \ 4 + \frac{1}{y^2} + \frac{2}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^2, \ 4 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \ \left\{ -3 - \frac{1}{x} - 2x - x^2, \ 4 + \frac{1}{y^2} + \frac{2}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \ \left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \ \left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{1}{y^2} + \frac{3}{y} + 3y + 2y^2 + y^3 \right\}, \ \left\{ -3 - \frac{1}{x} - 2x - x^2, \ 5 + \frac{3}{y} + 3y + 2y^2 + y^3 \right\},$$

$$\left\{ -3 - \frac{1}{x} - 2x - x^$$

In[20]:= firsts[5]

$$\begin{aligned} \text{Out} \, [20] = \ & \left\{ -3 \,,\, -2 \,,\, -1 \,,\, 0 \,,\, -3 \,-\, \frac{2}{x} \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,,\, -3 \,-\, \frac{1}{x} \,,\, -2 \,-\, \frac{1}{x} \,,\, -3 \,-\, 2 \,x \,,\, -4 \,-\, \frac{2}{x} \,-\, 2 \,x \,,\, \\ & -3 \,-\, \frac{2}{x} \,-\, 2 \,x \,,\, -4 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,,\, -3 \,-\, \frac{1}{x} \,-\, 2 \,x \,,\, -3 \,-\, x \,,\, -2 \,-\, x \,,\, \\ & -3 \,-\, \frac{2}{x} \,-\, x \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, x \,,\, -3 \,-\, \frac{1}{x} \,-\, x \,,\, -2 \,-\, \frac{1}{x} \,-\, x \,,\, -3 \,-\, 2 \,x \,-\, x^2 \,,\, -4 \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, \\ & -3 \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -4 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{2}{x} \,-\, 2 \,x \,-\, x^2 \,,\, -3 \,-\, \frac{1}{x^2} \,-\, \frac{1}{x^2} \,-\, \frac{1}{x^2} \,-\, \frac{1}{x^2} \,-\, \frac{1}{x$$