

Solve for the variables.

$$\begin{bmatrix} 7x \\ x+y \end{bmatrix} = \begin{bmatrix} 5+2y \\ 11 \end{bmatrix}$$

$$\begin{aligned} 7x &= 5+2y \\ 7(11-y) &= 5+2y \\ 77-7y &= 5+2y \\ +7y & \quad +7y \\ 77 &= 5+9y \\ -5 & \quad -5 \\ \frac{68}{9} &= \frac{9y}{9} \end{aligned}$$

$$y = \frac{68}{9}$$

$$\begin{aligned} x+y &= 11 \\ -y & \quad -y \\ \hline x &= 11-y \end{aligned}$$

$$x = 11 - y$$

$$x = \frac{11 \cdot 9}{1 \cdot 9} - \frac{68}{9}$$

$$x = \frac{99}{9} - \frac{68}{9}$$

$$x = \frac{32}{9}$$

Solve for the variables.

$$\begin{bmatrix} 5x-7 \\ 5 \end{bmatrix} = \begin{bmatrix} 8 \\ r^3-3 \end{bmatrix} \quad \begin{bmatrix} 11 \\ 23 \end{bmatrix} = \begin{bmatrix} 21-m \\ 4y+x \end{bmatrix}$$

$$\begin{aligned} 5x-7 &= 8 \\ +7 & \quad +7 \end{aligned}$$

$$\frac{5x}{5} = \frac{15}{5}$$

$$x = 3$$

$$\begin{aligned} 11 &= 21-m \\ -21 & \quad -21 \end{aligned}$$

$$\frac{-10}{-1} = \frac{-m}{-1}$$

$$10 = m$$

$$5 = r^3 - 3$$

$$\begin{aligned} +3 & \quad +3 \\ \sqrt[3]{8} &= \sqrt[3]{3} \end{aligned}$$

$$r = 2$$

$$23 = 4y + x$$

$$\begin{aligned} 23 &= 4y + 3 \\ -3 & \quad -3 \end{aligned}$$

$$\frac{20}{4} = \frac{4y}{4}$$

$$y = 5$$

Evaluate the matrices.

$$\begin{bmatrix} 1 \\ 6 \\ 0 \end{bmatrix} + 5 \begin{bmatrix} 2 \\ 7 \\ -8 \end{bmatrix} - 3 \begin{bmatrix} -1 \\ 4 \\ 12 \end{bmatrix}$$

$$\begin{bmatrix} 6 \\ -18 \\ 0 \end{bmatrix} + \begin{bmatrix} 10 \\ 35 \\ -40 \end{bmatrix} + \begin{bmatrix} 3 \\ -12 \\ -36 \end{bmatrix} = \begin{bmatrix} 19 \\ 5 \\ -76 \end{bmatrix}$$

Evaluate the matrices.

$$7 \begin{bmatrix} 2 & -1 & 8 \\ 4 & 7 & 9 \end{bmatrix} - 2 \begin{bmatrix} -1 & 4 & -3 \\ 7 & 2 & -6 \end{bmatrix}$$

$$\begin{bmatrix} 14 & -7 & 56 \\ 28 & 49 & 63 \end{bmatrix} + \begin{bmatrix} 2 & -8 & 6 \\ -14 & -4 & 12 \end{bmatrix}$$

$$\begin{bmatrix} 16 & -15 & 62 \\ 14 & 45 & 75 \end{bmatrix}$$