

$$1.a) \left[\begin{array}{ccc|c} 2 & 1 & -2 & -2 \\ -1 & 3 & 6 & -3 \\ -3 & 1 & 12 & 11 \end{array} \right]$$

$$b.) \left[\begin{array}{ccc|c} 2 & -6 & -12 & 6 \\ 2 & 1 & -2 & -2 \\ -3 & 1 & 12 & 11 \end{array} \right]$$

$$\rightarrow \left[\begin{array}{ccc|c} 1 & -3 & -6 & 3 \\ 0 & 7 & 10 & -8 \\ -3 & 1 & 12 & 11 \end{array} \right]$$

$$\rightarrow \left[\begin{array}{ccc|c} 1 & -3 & -6 & 3 \\ 0 & 7 & 10 & -8 \\ 0 & -8 & 6 & 20 \end{array} \right]$$

$$\rightarrow \left[\begin{array}{ccc|c} 1 & -3 & -6 & 3 \\ 0 & 1 & 10/7 & -8/7 \\ 0 & -8 & -6 & 20 \end{array} \right]$$

$$\rightarrow \left[\begin{array}{ccc|c} 1 & -3 & -6 & 3 \\ 0 & -3 & -30/7 & 24/7 \\ 0 & -8 & -6 & 20 \end{array} \right]$$

$$\rightarrow \left[\begin{array}{ccc|c} 1 & 0 & -12/7 & -3/7 \\ 0 & 1 & 10/7 & -8/7 \\ 0 & -8 & -6 & 20 \end{array} \right]$$

$$\rightarrow \left[\begin{array}{ccc|c} 1 & 0 & -12/7 & -3/7 \\ 0 & 1 & 10/7 & -8/7 \\ 0 & 0 & 38/7 & 76/7 \end{array} \right]$$

$$\rightarrow \left[\begin{array}{ccc|c} 1 & 0 & 0 & 3 \\ 0 & 1 & 10/7 & -8/7 \\ 0 & 0 & 1 & 2 \end{array} \right]$$

$$\Rightarrow \left[\begin{array}{ccc|c} 1 & 0 & 0 & 3 \\ 0 & 1 & 0 & -4 \\ 0 & 0 & 1 & 2 \end{array} \right]$$

c.) $x = 3 \quad y = -4 \quad z = 2$

2a.)
$$\begin{array}{rcl} 2a + 3c & = & 19 \\ 1a + 4c & = & 17 \end{array}$$

b.)
$$\left[\begin{array}{cc|c} 2 & 3 & 19 \\ 1 & 4 & 17 \end{array} \right]$$

c.)
$$\Rightarrow \left[\begin{array}{cc|c} 1 & 4 & 17 \\ 0 & -5 & -15 \end{array} \right]$$

$$\Rightarrow \left[\begin{array}{cc|c} 1 & 0 & 5 \\ 0 & 1 & 3 \end{array} \right]$$

d.) $a = \$5 \quad c = \3

e.) children = \$3 \quad adults = \$5