$\boxed{2.1A}$ (16) $\vec{a}_1 = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$, $\vec{a}_2 = \begin{pmatrix} 2 \\ 1 \end{pmatrix}$ $\vec{b} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$$\vec{b} = c_1 \vec{a}_1 + c_2 \vec{a}_2 \iff \begin{pmatrix} 0 \\ 1 \end{pmatrix} = c_1 \begin{pmatrix} 1 \\ 2 \end{pmatrix} + c_2 \begin{pmatrix} 2 \\ 1 \end{pmatrix}$$

$$\iff \left.\begin{array}{l} c_1 + 2c_2 = 0 \Longrightarrow c_1 = -2c_2 \\ 2c_1 + c_2 = 1 \Longrightarrow -4c_2 + c_2 = 1 \end{array}\right\} \Rightarrow \begin{array}{l} c_1 = -2c_2 \\ -3c_2 = 1 \end{array}$$

$$\Rightarrow \left.\begin{array}{l} c_2 = -\frac{1}{3} \\ c_1 = -2c_2 = \frac{2}{3} \end{array}\right| \Rightarrow \boxed{\begin{pmatrix} 0 \\ 1 \end{pmatrix} = \frac{2}{3} \begin{pmatrix} 1 \\ 2 \end{pmatrix} + -\frac{1}{3} \begin{pmatrix} 2 \\ 1 \end{pmatrix}}$$

(18) $\vec{a}_1 = \begin{pmatrix} 0 \\ 1 \\ 1 \end{pmatrix}$, $\vec{a}_2 = \begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix}$, $\vec{a}_3 = \begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix}$

$$\vec{b} = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix} = c_1 \begin{pmatrix} 0 \\ 1 \\ 1 \end{pmatrix} + c_2 \begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix} + c_3 \begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix}$$

$$\Rightarrow \left.\begin{array}{l} c_2 + c_3 = 1 \\ c_1 + c_2 + 2c_3 = 2 \\ c_1 + c_3 = 3 \end{array}\right\} \begin{array}{l} c_2 = 1 - c_3 \\ c_1 + 1 - c_3 + 2c_3 = 2 \\ c_1 + c_3 = 3 \end{array} \Bigg| \Rightarrow$$

$$\Rightarrow \left.\begin{array}{l} c_2 = 1 - c_3 \\ c_1 + c_3 = 1 \\ c_1 + c_3 = 3 \end{array}\right\}$$

we see that these equations contradict $\Rightarrow$ no such coefficients exist.