

$$\vec{x} = 3 \begin{pmatrix} v_1 \\ v_2 \\ v_3 \end{pmatrix} - 7 \begin{pmatrix} u_1 \\ u_2 \\ u_3 \end{pmatrix} + 5 \begin{pmatrix} w_1 \\ w_2 \\ w_3 \end{pmatrix} = \begin{pmatrix} 3v_1 - 7u_1 + 5w_1 \\ 3v_2 - 7u_2 + 5w_2 \\ 3v_3 - 7u_3 + 5w_3 \end{pmatrix} .$$

$$\vec{v} = \begin{pmatrix} 1 \\ -4 \\ 0 \end{pmatrix}, \quad \vec{u} = \begin{pmatrix} -2 \\ 1 \\ 1 \end{pmatrix}, \quad \vec{w} = \begin{pmatrix} 0 \\ 7 \\ -\frac{1}{5} \end{pmatrix},$$

$$\vec{x} = 3\vec{v} - 7\vec{u} + 5\vec{w} = \begin{pmatrix} 3 \cdot 1 - 7 \cdot (-2) + 5 \cdot 0 \\ 3 \cdot (-4) - 7 \cdot 1 + 5 \cdot 7 \\ 3 \cdot 0 - 7 \cdot 1 + 5 \cdot (-\frac{1}{5}) \end{pmatrix} = \begin{pmatrix} 3 + 14 \\ -12 - 7 + 35 \\ -7 - 1 \end{pmatrix} = \begin{pmatrix} 17 \\ 14 \\ -8 \end{pmatrix}.$$