**Question 1** *Determine whether the set described below is linearly dependent or linearly independent.*

$$\left\{ \begin{bmatrix} 3 \\ 6 \\ -4 \end{bmatrix}, \begin{bmatrix} -12 \\ -24 \\ 16 \end{bmatrix} \right\}$$

***Multiple Choice:***

(a) *Linearly dependent* ✓

(b) *Linearly independent*

**Question 2** *Determine whether the set described below is linearly dependent or linearly independent.*

$$\text{The columns of } A \text{ where } A = \begin{bmatrix} 1 & 8 & 0 & 5 \\ 0 & 4 & 1 & 2 \end{bmatrix}$$

***Multiple Choice:***

(a) *Linearly dependent* ✓

(b) *Linearly independent*

**Question 3** *Determine whether the set described below is linearly dependent or linearly independent.*

$$\left\{ \begin{bmatrix} 2 \\ 1 \\ 0 \\ 1 \end{bmatrix}, \begin{bmatrix} 0 \\ 1 \\ 1 \\ 0 \end{bmatrix} \right\}$$

***Multiple Choice:***

(a) *Linearly dependent*

(b) *Linearly independent* ✓

**Question 4** *Determine whether the set described below is linearly dependent or linearly independent.*

$$\text{The columns of } A \text{ where } A = \begin{bmatrix} 1 & 8 & 0 \\ 0 & 4 & 0 \\ 3 & 0 & 0 \end{bmatrix}$$

*Multiple Choice:*

(a) *Linearly dependent* ✓

(b) *Linearly independent*

**Question 5** *Suppose $4\mathbf{v}_1 - 2\mathbf{v}_2 + \mathbf{v}_3 = 0$. Then $\{\mathbf{v}_1, \mathbf{v}_2, \mathbf{v}_3\}$ is a linearly independent set.*

*Multiple Choice:*

(a) *True*

(b) *False* ✓