

Section 2.1

True-False Review

1. True
3. True
5. True
7. True
9. True

Problems

1. $a_{31} = 0, a_{24} = -1, a_{14} = 2, a_{32} = 2, a_{21} = 7, a_{34} = 4.$
3. $\begin{bmatrix} 2 & 1 & -1 \\ 0 & 4 & -2 \end{bmatrix}, 2 \times 3.$
5. $\begin{bmatrix} 1 & -3 & -2 \\ 3 & 6 & 0 \\ 2 & 7 & 4 \\ -4 & -1 & 5 \end{bmatrix}, 4 \times 3.$
7. 4.
9. -1.
11. Column vectors: $\begin{bmatrix} 1 \\ -1 \\ 2 \end{bmatrix}, \begin{bmatrix} 3 \\ -2 \\ 6 \end{bmatrix}, \begin{bmatrix} -4 \\ 5 \\ 7 \end{bmatrix}.$
Row vectors: $[1 \ 3 \ -4], [-1 \ -2 \ 5], [2 \ 6 \ 7].$
13. $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 1 \end{bmatrix}.$ Column vectors: $\begin{bmatrix} 1 \\ 3 \\ 5 \end{bmatrix}, \begin{bmatrix} 2 \\ 4 \\ 1 \end{bmatrix}.$
15. $q \times p.$
21. For example, $A(t) = \begin{bmatrix} \sqrt{t+2} & 0 & 0 \\ 1/\sqrt{3-t} & 0 & 0 \end{bmatrix}.$
25. For example, $A(t) = [t]$ and $B(t) = [t^2].$
27. $a_{12} = -1, a_{13} = -3, a_{32} = 1, a_{11} = a_{22} = a_{33} = 0.$