

## Section 1.5 Inverse of Square Matrices

14.

$$\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} -7 & 5 & 3 \\ 3 & -2 & -2 \\ 3 & -2 & -1 \end{bmatrix} \begin{bmatrix} 5 \\ 3 \\ 8 \end{bmatrix} = \begin{bmatrix} 4 \\ -7 \\ 1 \end{bmatrix}$$

26.

Let  $B$  be a matrix such that  $A^2B = BA^2 = I$ . Then  $A(AB) = (BA)A = I$ . By the theorem 1.9 in the textbook, we have  $BA = AB$ . Thus  $A$  is invertible and  $A^{-1} = BA = AB$ .

**theorem 1.9**

Let  $A$  be an  $n \times n$  matrix. If  $C$  and  $D$  are matrices such that  $AC = DA = I$ , then  $C = D$ .