

A3

**20.** 20**21.** -5**27.** 466,250 mi<sup>2</sup>

**54.** yes; 
$$\begin{bmatrix} -4 & -3.5 & 2 \\ -5 & -5 & 3 \\ 2 & 2 & -1 \end{bmatrix}$$

**55.** yes; 
$$\begin{bmatrix} 0.4 & 0.4 & 0.2 \\ -0.6 & -0.6 & 0.2 \\ -0.2 & 0.8 & 0.4 \end{bmatrix}$$

**56.** yes; 
$$\begin{bmatrix} 0 & \frac{1}{7} & \frac{2}{7} \\ \frac{1}{4} & \frac{3}{14} & -\frac{1}{14} \\ \frac{1}{2} & 0 & 0 \end{bmatrix}$$

**57.** no inverse because the determinant equals zero

A4

**9.** 
$$\begin{bmatrix} \frac{29}{31} \\ -\frac{66}{217} \\ \frac{34}{217} \end{bmatrix}$$

**23.** (2, -1, 3)**27.** 2.5 lb of almonds, 3.5 lb of peanuts, and 3 lb of raisins**32.** (4, 1, 3)**37.** (1, 1, 1, 1)