Name _____

# 10-1 Reteach to Build Understanding

## Operations with Matrices

To add two matrices, add the corresponding elements.

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix} + \begin{bmatrix} s & t \\ x & y \end{bmatrix} = \begin{bmatrix} a+s & b+t \\ c+x & d+y \end{bmatrix}$$

To multiply a matrix by a scalar, multiply each element in the matrix by the scalar.

$$a \cdot \begin{bmatrix} s & t \\ x & y \end{bmatrix} = \begin{bmatrix} as & at \\ ax & ay \end{bmatrix}$$

**1.** Solve.

$$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} + \begin{bmatrix} 5 & 6 \\ 7 & 8 \end{bmatrix} = \begin{bmatrix} 1+5 & 2+6 \\ 3+7 & 4+8 \end{bmatrix}$$

$$= \begin{bmatrix} \_\_ & \_\_ \\ \_\_ & \_\_ \end{bmatrix}$$

$$1.5 \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} = \begin{bmatrix} (1.5) \cdot 1 & (1.5) \cdot 2 \\ (1.5) \cdot 3 & (1.5) \cdot 4 \end{bmatrix}$$

$$= \begin{bmatrix} \_\_ & \_\_ \\ \_\_ & \_\_ \end{bmatrix}$$

**2.** Jennifer added the following matrices to get a third matrix. Find and fix her error.

$$\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix} + \begin{bmatrix} 2 & 6 \\ 7 & 8 \end{bmatrix} = \begin{bmatrix} 3 & 7 \\ 8 & 8 \end{bmatrix}$$

**3.** Jayesh started to solve the problems below, but he ran out of time and left some blanks. Help Jayesh by filling in the blanks.

**a.** $\begin{bmatrix} 4 & 10 \\ 6 & 8 \end{bmatrix} + \begin{bmatrix} 5 & 3 \\ 2 & 6 \end{bmatrix} = \begin{bmatrix} 4+5 & \_\_\_\_\_ \\ \_\_ + 2 & 8 + \_\_ \end{bmatrix}$

$$= \begin{bmatrix} \_\_ & 13 \\ 8 & \_\_ \end{bmatrix}$$

**b.** $0.2 \begin{bmatrix} 2 & 4 \\ 6 & 8 \end{bmatrix} = \begin{bmatrix} 0.2 \cdot (2) & \_\_\_\_ \cdot (4) \\ \_\_\_\_ \cdot \_\_\_\_ & 0.2 \cdot \_\_\_\_ \end{bmatrix}$

$$= \begin{bmatrix} 0.4 & \_\_ \\ 1.2 & \_\_ \end{bmatrix}$$