SHOW ALL OF YOUR WORK!!

1. Find the inverse for each of the following matrices.

   (a) $\begin{pmatrix} 3 & -5 \\ 4 & -7 \end{pmatrix}$

   (b) $\begin{pmatrix} 3 & 2 \\ 7 & 5 \end{pmatrix}$

   (c) $\begin{pmatrix} -6 & -4 \\ 3 & 7 \end{pmatrix}$

   (d) $\begin{pmatrix} 4 & 6 \\ -7 & -8 \end{pmatrix}$

   (e) $\begin{pmatrix} 3 & 2 \\ -7 & 5 \end{pmatrix}$

   (f) $\begin{pmatrix} 4 & -2 \\ 8 & -4 \end{pmatrix}$

   Write each of the following systems of equations in matrix form then find the point of intersection by using the inverse of the coefficient matrix. DO NOT express your answer in decimal form. Do not graph the lines.

2. $\begin{aligned} -3x + 2y &= -1 \\ -5x + 3y &= -3 \end{aligned}$

3. $\begin{aligned} 3x + 5y &= -4 \\ 5x - 4y &= -3 \end{aligned}$

4. $\begin{aligned} 5x - 6y &= 3 \\ 4x - 3y &= -2 \end{aligned}$

5. $\begin{aligned} -6x + 4y &= -3 \\ 5x - 2y &= 4 \end{aligned}$

6. $\begin{aligned} -7x - 3y &= 4 \\ -4x + 5y &= -5 \end{aligned}$