1. Find the equation of the parabola that passes through the points (0,2), (2,3) and (-1,0).

\[ 8x + 0y + z = 5 \]

2. Solve the system of equations:
\[
\begin{align*}
8x - 3y - z &= 5 \\
8x + 4y + 0z &= -1 
\end{align*}
\]

3. Sonya decides to take over the world. She figures that it will take 20 foot soldiers, 10 cannons and 8 cavalry to take over a small town (like Central Heights). To take over a strong town (like Nacogdoches) will take 30 soldiers, 50 cannons and 15 horses (i.e. cavalry). To take over a weak town (like Lufkin) she only needs to use 2 soldiers, one cannon and a horse. If she has 300 foot soldiers, 290 cannons, and 134 cavalry units, and wants to use all of them, how many of each type of town should she take over?