Show all work. Unjustified answer yields no credit. No calculators!

Consider the following system of linear equations

$$
\begin{align*}
2x_1 + 2x_2 + 4x_3 - 2x_4 &= 4 \\
x_1 - 3x_3 + 2x_4 &= 1 \\
-x_1 - 2x_2 - 7x_3 + 4x_4 &= -3
\end{align*}
$$

1. Find out a parametric solution of this system.

2. Write down the general solution of this system as a particular solution plus a linear combination of corresponding vectors.