TD 2 – LINEAR ALGEBRA

(1) Find a basis for the vector space generated by the three vectors $(1, 2, 3)^t$, $(-1, 2, -3)^t$, and $(-1, 6, -3)^t$.

(2) Find all solutions to the linear system:

$$\begin{aligned} 3x + 2y &= 1 \\ x - y &= 2 \\ 4x + 2y &= 2 \end{aligned}$$

(3) A three-digit number has two properties. The tens-digit and the ones-digit add up to 5. If the number is written with the digits in the reverse order, and then subtracted from the original number, the result is 792. Use a system of equations to find all of the three-digit numbers with these properties.