

**1** We seek 5 numbers  $x_1, \dots, x_5$  such that their sum is 50, the sum of 3 of them (e.g. the odd-labeled ones) is 25, and the difference between the other 2 is 5.

(a) What equations must be satisfied ?

(b) Find the (standard) echelon form of this system and its general solution.

(c) Verify your answer with `rref` [Matlab]

**2** The choice of 'basic' vs 'free' variables is not unique. For this example, what other choices can you make? [Hint: use only the `rref`]