Homework

1. Please determine whether the following vectors are linear independent?

(1) $a_1 = (2,-1,0,3),\ a_2 = (1,2,5,-1),\ a_3 = (7,-1,5,8)$

(2) $p_1(x) = 1-x,\ p_2(x) = 5+3x-2x^2,\ p_3(x) = 1+3x-2x^2$

2. Let V be a vector space over R and $n \in N$ be an odd number. If the vectors $x_1, x_2, \cdots, x_n \in V$ are linearly independent, then the same stands also for the vectors $x_1 + x_2, x_2 + x_3, \cdots, x_{n-1} + x_n, x_n + x_1$.