Additional Explanation on Q.2(b)

- To better understand the solution (which applies to any value of n), you may consider a concrete example, say, $n = 2$.
- The set of all polynomials with degree equal to 2 is
$$\{ax^2 + bx + c : a > 0\}.$$
  - Note that a must be positive, for otherwise the degree of the polynomial is less than 2.
- Consider x^2 and $-x^2$, which are both in the above set. The set is not closed under addition because $x^2 + (-x^2) = 0$, which has degree 0.
- It can also be proved that the set is not closed under scalar multiplication by choosing the scalar to be 0.