

## Conditions

if  $(1+x+x^2) = a_0 + a_1x + a_2x^2 + \dots + a_{2n}x^{2n}$ , then  $a_0 + a_3 + a_6 + \dots = ?$   
[ $a_2$  means a subscript 2 & so on...]

## Solution

$$1 + x + x^2 = a_0 + a_1x + a_2x^2 + \dots + a_{2n}x^{2n}$$

As we may see, in the left hand we have all coefficients equal to 0, except first three, whose are equal to 1. Hence,

$$a_0 = 1$$

$$a_3 = 0$$

$$a_6 = 0$$

$$\text{And } a_0 + a_3 + a_6 = 1$$

Answer: 1