H1 (1/1 point)

The solution number of non-negative integer solutions of x+2y=10 is:

6

Answer: 6

EXPLANATION

The coefficient of x^{10} in $G(x) = (1 + x + x^2 + x^3 + \dots)\,(1 + x^2 + x^4 + x^6 + \dots)$

It might be quite difficult to do the polynomial multiplication. Then you could enumerate the solutions by iteratively assigning the feasible value of y.

Final Check | Save | Hide Answer *You have used 1 of 2 submissions*

Help

H2 (1/1 point)

Integer 5 is partitioned into orderly partitions which are made up by numbers 1,2,3,4. Such as (1+1+3, or 1+3+1 or 2+3, 4+1,....) How many different ways are there?

15

15

Answer: 15

EXPLANATION

The orderly partitions could be classified into 2-partition, 3-partition, 4-partition and 5-partition.

According to the orderly partitions shown discussed in the video, the partitionning way to partition n into the orderly sum of k numbers should be C(n-1,k-1). Therefore, n=5, k= 2, 3, 4, 5.

C(4,1)+C(4,2)+C(4,3)+C(4,4)=15

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H3 (1/1 point)

Given the recurrence relation of Fibonacci sequence is F(n)=F(n-1)+F(n-2), set G(n)=F(2n), then the recurrence relation of G(n) is:

G(n)=___G(n-1)+___G(n-2)+____G(n-3)

Please choose the coefficient value:

- 1,1,0

- 3,1,0
- 3,-1,1
- 3,1,1
- 3,-1,0 ✔
- 1,1,1

EXPLANATION

G(n)=F(2n)=F(2n-1)+F(2n-2)=2F(2n-2)+F(2n-3)=3F(2n-2)-F(2n-4)=3G(n-1)-G(n-2)

Check | Save | Hide Answer | *You have used 1 of 3 submissions*

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