Probability and Random Variables Assignment

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1 Question 11(a)

Given the fourth term of the A.P is 22
15th term of A.P. is 66
Let first term of A.P. be a
Let common difference of A.P. be d
The nth (a_n) term of any Arithmetic progression is given by
$a_n = a + (n-1)d$
So, $a_4 = a + 3d$ =22
$a_15 = a + 14d = 66$
Subtracting above 2 equations we get,
$11d = 44$
$d = 4$
Putting the value of d in a_4 equation
$a + 3(4) = 22$
$a = 10$
Hence 1st term of the A.P. is 10 and common difference is 4.
Sum of an A.P till n terms is given by

$$S_n = (\frac{n}{2}(2a + (n-1)d)$$

$$S_8 = \frac{8}{2}(2(10) + (8-1)4$$

$$S_8 = 4(20 + 28)$$

$$S_8 = 192$$