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II Semester B. Tech. CSE(AI)- Discrete Mathematics-23MAT116

Lab Exercise-2-Mathematical Induction

1. Program to find sum of first n positive integers :
2. clear all;
3. clc;
4. sum1=0;sum2=0;
5. n=input('enter the value of n :\n');
6. for i = 1:n
7. sum1=sum1+i;
8. end
9. fprintf('\n sum from the series is %d', sum1 )
10. sum2=n\*(n+1)/2;
11. fprintf('\n sum from the guessed formula is %d', sum2 )
12. if sum1==sum2
13. fprintf('\n your guess formula is right \n')
14. else
15. fprintf('\n your guess formula is wrong \n')
16. end
17. Program to find sum of squares of first n positive integers :
18. clear all;
19. clc;
20. sum1=0;sum2=0;
21. n=input('enter the value of n :\n');
22. for i = 1:n
23. sum1=sum1+i^2;
24. end
25. fprintf('\n sum from the series is %d', sum1 )
26. sum2=n\*(n+1)\*(2\*n+1)/6;
27. fprintf('\n sum from the guessed formula is %d', sum2 )
28. if sum1==sum2
29. fprintf('\n your guess formula is right \n')
30. else
31. fprintf('\n your guess formula is wrong \n')
32. end
33. Program to find sum of cubes of first n positive integers :
34. clear all;
35. clc;
36. sum1=0;sum2=0;
37. n=input('enter the value of n :\n');
38. for i = 1:n
39. sum1=sum1+i^3;
40. end
41. fprintf('\n sum from the series is %d', sum1 )
42. sum2=(n^2)\*(n+1)^2/4;
43. fprintf('\n sum from the guessed formula is %d', sum2 )
44. if sum1==sum2
45. fprintf('\n your guess formula is right \n')
46. else
47. fprintf('\n your guess formula is wrong \n')
48. end
49. Guess a formula for the following and write a program to check whether your guessed formula is correct:
50. sum of first n odd positive integers (b) sum of first n even positive integers

(c)sum of squares of first n even positive integers (d) sum of squares of first n odd positive

integers