

11-2 Skills Practice

Arithmetic Series

Find S_n for each arithmetic series described.

1. $a_1 = 1, a_n = 19, n = 10$

2. $a_1 = -5, a_n = 13, n = 7$

3. $a_1 = 12, a_n = -23, n = 8$

4. $a_1 = 7, n = 11, a_n = 67$

5. $a_1 = 5, n = 10, a_n = 32$

6. $a_1 = -4, n = 10, a_n = -22$

7. $a_1 = -8, d = -5, n = 12$

8. $a_1 = 1, d = 3, n = 15$

9. $a_1 = 100, d = -7, a_n = 37$

10. $a_1 = -9, d = 4, a_n = 27$

11. $d = 2, n = 26, a_n = 42$

12. $d = -12, n = 11, a_n = -52$

Find the sum of each arithmetic series.

13. $1 + 4 + 7 + 10 + \dots + 43$

14. $5 + 8 + 11 + 14 + \dots + 32$

15. $3 + 5 + 7 + 9 + \dots + 19$

16. $-2 + (-5) + (-8) + \dots + (-20)$

17. $\sum_{n=1}^5 (2n - 3)$

18. $\sum_{n=1}^{18} (10 + 3n)$

19. $\sum_{n=2}^{10} (4n + 1)$

20. $\sum_{n=5}^{12} (4 - 3n)$

Find the first three terms of each arithmetic series described.

21. $a_1 = 4, a_n = 31, S_n = 175$

22. $a_1 = -3, a_n = 41, S_n = 228$

23. $n = 10, a_n = 41, S_n = 230$

24. $n = 19, a_n = 85, S_n = 760$

11-2 Practice**Arithmetic Series****Find S_n for each arithmetic series described.**

1. $a_1 = 16, a_n = 98, n = 13$

2. $a_1 = 3, a_n = 36, n = 12$

3. $a_1 = -5, a_n = -26, n = 8$

4. $a_1 = 5, n = 10, a_n = -13$

5. $a_1 = 6, n = 15, a_n = -22$

6. $a_1 = -20, n = 25, a_n = 148$

7. $a_1 = 13, d = -6, n = 21$

8. $a_1 = 5, d = 4, n = 11$

9. $a_1 = 5, d = 2, a_n = 33$

10. $a_1 = -121, d = 3, a_n = 5$

11. $d = 0.4, n = 10, a_n = 3.8$

12. $d = -\frac{2}{3}, n = 16, a_n = 44$

Find the sum of each arithmetic series.

13. $5 + 7 + 9 + 11 + \dots + 27$

14. $-4 + 1 + 6 + 11 + \dots + 91$

15. $13 + 20 + 27 + \dots + 272$

16. $89 + 86 + 83 + 80 + \dots + 20$

17. $\sum_{n=1}^4 (1 - 2n)$

18. $\sum_{j=1}^6 (5 + 3n)$

19. $\sum_{n=1}^5 (9 - 4n)$

20. $\sum_{k=4}^{10} (2k + 1)$

21. $\sum_{n=3}^8 (5n - 10)$

22. $\sum_{n=1}^{101} (4 - 4n)$

Find the first three terms of each arithmetic series described.

23. $a_1 = 14, a_n = -85, S_n = -1207$

24. $a_1 = 1, a_n = 19, S_n = 100$

25. $n = 16, a_n = 15, S_n = -120$

26. $n = 15, a_n = 5\frac{4}{5}, S_n = 45$

27. STACKING A health club rolls its towels and stacks them in layers on a shelf. Each layer of towels has one less towel than the layer below it. If there are 20 towels on the bottom layer and one towel on the top layer, how many towels are stacked on the shelf?

28. BUSINESS A merchant places \$1 in a jackpot on August 1, then draws the name of a regular customer. If the customer is present, he or she wins the \$1 in the jackpot. If the customer is not present, the merchant adds \$2 to the jackpot on August 2 and draws another name. Each day the merchant adds an amount equal to the day of the month. If the first person to win the jackpot wins \$496, on what day of the month was her or his name drawn?