Name _____

13-1B **Lesson Master**

VOCABULARY

1. What is a series?

_____

_____

SKILLS Objective A

In 2–9, evaluate the given arithmetic series.

2. $5 + 10 + 15 + \ldots + 75$ _____

3. $-10 + -14 + -18 + \ldots + -94$ _____

4. $-11 + -5 + 1 + \ldots + 37$ _____

5. the sum of the first 80 positive integers   _____

6. the sum of the first 50 odd positive integers _____

7. the sum of the first 50 even positive integers _____

8. the sum of the first thirty-five terms of the sequence
$\begin{cases} a_1 = 12 \\ a_n = a_{n-1} + 3 \text{ for integers } n \geq 2 \end{cases}$ _____

9. the sum of the first one hundred terms of the sequence
$\begin{cases} a_1 = -5 \\ a_n = a_{n-1} - 2 \text{ for integers } n \geq 2 \end{cases}$ _____

SKILLS Objective C

Fill in the Blanks In 10 and 11, write out the terms of the series and find the sum.

10. $\sum_{i=1}^{5} i^3 =$ _____.

11. $\sum_{n=3}^{7} 2n + 1 =$ _____.

In 12 and 13, write the arithmetic series in summation notation.

12. $3 + 6 + 9 + \ldots + 99$

13. $12 + 9 + 6 + \ldots + -18 + -21$

_____   _____

Fill in the Blanks In 14 and 15, find the sum.

14. $\sum_{i=1}^{20} 2i - 1 =$ _____.

15. $\sum_{i=1}^{10} \frac{i+2}{2} =$ _____.

Name

USES Objective G

16. Mary began each workout with sit-ups, and increased the number of sit-ups she did each week. The first week she did 50; the second week she did 60; the following week she did 70. Each week thereafter, she did 10 more sit-ups than she had done the previous week.

 a. How many sit-ups did Mary do in the 19th week? _____

 b. In which week did Mary first do 500 sit-ups? _____

17. Sam built a house of cards with 54 cards on the first level, 50 cards on the second level, and 4 fewer cards on each successive level. If the house of cards has 8 levels, how many cards are used in all? _____

18. A garden in the park is planted with 68 marigolds in the first row, 72 in the second row, and 4 more in each successive row. If the garden has 11 rows of marigolds, how many marigolds are there in all? _____

19. A health club offers a special rate to encourage new members to join their gym. The first month's fees are $70. Each successive month's fees drop $2 during the first year.

 a. What is the total amount of membership fees the first year? _____

 b. During which month did the total reach at least $500? _____

20. Setsuo jogged 6 blocks the first day, 7 blocks the second day, and continued to jog an additional block every day. In how many days will he have jogged a total of 35 miles? (Use 1 mile = 12 blocks.) _____

REVIEW Lesson 7-5, Objective C

In 21–25, give the first five terms of the geometric sequence described.

21. constant ratio -8, first term 3 _____

22. constant ratio $\frac{2}{3}$, first term 2187 _____

23. third term 500, fourth term 2500 _____

24. $g_n = 12(4)^{n-1}$, for integers $n \geq 1$ _____

25. $\begin{cases} g_1 = 16 \\ g_n = -2g_{n-1} \text{ for integers } n \geq 2 \end{cases}$ _____

In 26 and 27, a sequence is given. Could the sequence be geometric? If yes, give its constant ratio.

26. 9, 18, 27, 36, … _____   **27.** $\frac{11}{6}$, 11, 66, 396, … _____