Name_____ Date_____

## 7.1　Practice B

**In Exercises 1–6, write the first six terms of the sequence.**

**1.** $a_n = n^2 + 4$

**2.** $a_n = 3^{n-2}$

**3.** $a_n = (n-2)^2$

**4.** $a_n = -n^2 + 3$

**5.** $f(n) = \dfrac{-n}{n+5}$

**6.** $a_n = \dfrac{n}{3n-1}$

**In Exercises 7–14, describe the pattern, write the next term, and write a rule for the _n_th term of the sequence.**

**7.** 2, 7, 12, 17, …

**8.** 2.7, 6.2, 9.7, 13.2, …

**9.** 6.4, 3.5, 0.6, −2.3, …

**10.** $-\dfrac{1}{7}, -\dfrac{2}{7}, -\dfrac{3}{7}, -\dfrac{4}{7}, \dots$

**11.** $\dfrac{5}{2}, \dfrac{5}{4}, \dfrac{5}{8}, \dfrac{5}{16}, \dots$

**12.** $\dfrac{3}{1}, \dfrac{9}{2}, \dfrac{27}{3}, \dfrac{81}{4}, \dots$

**13.** $\dfrac{2}{3}, \dfrac{4}{9}, \dfrac{8}{27}, \dfrac{16}{81}, \dots$

**14.** 2, 20, 200, 2000, …

**15.** You are renting tables for a school event. There is a set-up and delivery fee of $100. The rental fee per table is $7. Write a rule for the cost of renting _n_ tables. Then graph the sequence.

**In Exercises 16–21, write the series using summation.**

**16.** 6 + 13 + 20 + 27 + 34

**17.** 10 + 13 + 16 + 19 + …

**18.** −3 + 0 + 5 + 12 + …

**19.** $\dfrac{1}{4} + \dfrac{2}{16} + \dfrac{3}{64} + \dfrac{4}{256} + \dots$

**20.** $\dfrac{2}{5} + \dfrac{2}{6} + \dfrac{2}{7} + \dfrac{2}{8} + \dots$

**21.** −1 + 3 − 5 + 7 − 9

**In Exercises 22–27, find the sum.**

**22.** $\displaystyle\sum_{i=1}^{6} 9i$

**23.** $\displaystyle\sum_{i=0}^{5} 2i^3$

**24.** $\displaystyle\sum_{n=1}^{6} \left(n^2 + 2\right)$

**25.** $\displaystyle\sum_{k=3}^{5} \dfrac{1}{k+2}$

**26.** $\displaystyle\sum_{k=1}^{15} 3$

**27.** $\displaystyle\sum_{i=13}^{27} i$

**28.** You are making party favors. In the first hour you made 36 party favors. Each hour you make two more party favors than in the previous hour. How many party favors will you have made after 7 hours? Justify your answer.