3. 0, 10, 21, 33, 46, 60, -?-, -?-

4. 1, 3, 6, 10, 15, 21, -?-, -?-

5.* 1, 4, 9, 16, 25, 36, -?-, -?-

6. W, T, Q, N, K, H, -?-, -?-

7.* $\frac{1}{6}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, -?-, -?-

8.* a, 6, c, 12, e, 18, -?-, -?-

9. $\frac{1}{2}$, 9, $\frac{2}{3}$, 10, $\frac{3}{4}$, 11, -?-, -?-

10. A, B, D, G, K, -?-, -?-

11.* 1, 1, 2, 3, 5, 8, 13, -?-, -?-

12. 1, 3, 4, 7, 11, 18, -?-, -?-

13. 1, 2, 4, 8, 16, 32, -?-, -?-

14.* 1, 3, 7, 15, 31, 63, -?-, -?-

15.* 2, 6, 15, 31, 56, 92, -?-, -?-

16.* 3, 5, 11, 29, 83, 245, -?-, -?-

17. 0, 3, 8, 15, 24, 35, -?-, -?-

18. 3, -12, 48, -192, 768, -?-, -?-

19.* 1, 2, 5, 14, 41, 122, -?-, -?-

20. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, -?-, -?-

21. Now it's your turn. Generate the first five terms of a sequence. Give the sequence to a member of your family or to a friend and ask him or her to find the next two terms in the sequence. Can he or she find your pattern?

22. Write the first five terms of two different sequences in which 12 is the third term.

For Exercises 23–26, study the given information until you discover a relationship that holds true for all the data. Then state your finding by completing the conjecture. Finally, try some numbers of your own to test your conjecture.

23.* $3 + 5 = 8$ $\quad 13 + 27 = 40$
$-3 + 5 = 2$ $\quad 51 + 85 = 136$
$-1 + 1 = 0$ $\quad -141 + -85 = -226$
Conjecture: The sum of two odd numbers is always an —?—.

24. $24 + 57 = 81$ $\quad 147 + 534 = 681$
$2 + -7 = -5$ $\quad -4 + -9 = -13$
$0 + 9 = 9$ $\quad 80 + -91 = -11$
Conjecture: The sum of an odd and an even number is always —?—.

25. $24 + 46 = 70$ $\quad 0 + 26 = 26$
$-12 + 8 = -4$ $\quad -26 + -18 = -44$
$-18 + 28 = 10$ $\quad 22 + 58 = 80$
Conjecture: The sum of —?—.

26. $3 \cdot 4 = 12$ $\quad -24 \cdot -3 = 72$
$12 \cdot 5 = 60$ $\quad -7 \cdot 8 = -56$
$11 \cdot -4 = -44$ $\quad -71 \cdot 0 = 0$
Conjecture: The product of —?—.

For Exercises 27–30, study the pattern and then complete the problem on the basis of your observations. (Please, no calculators here. You would be missing the point. You are looking for patterns, not mere numerical answers.)

27.
$1 \cdot 1 = 1$
$11 \cdot 11 = 121$
$111 \cdot 111 = 12321$
$1111 \cdot 1111 = 1234321$
$11111 \cdot 11111 =$ -?-

28.
$6 \cdot 7 = 42$
$66 \cdot 67 = 4422$
$666 \cdot 667 = 444222$
$6666 \cdot 6667 = 44442222$
$66666 \cdot 66667 =$ -?-

29.
$12345679 \cdot 9 = 111111111$
$12345679 \cdot 18 = 222222222$
$12345679 \cdot 27 = 333333333$
$12345679 \cdot 36 =$ -?-
$12345679 \cdot$ -?- $= 555555555$

30.
$9 \cdot 0 + 1 = 1$
$9 \cdot 1 + 2 = 11$
$9 \cdot 2 + 3 = 21$
$9 \cdot 3 + 4 =$ -?-
-?- $= 41$