Name _____   Date _____

Sketch the next figure in the pattern.

1.

2.

3.

4.
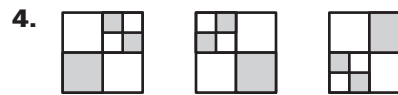
Describe a pattern in the numbers. Write the next number in the pattern. Graph the pattern on a number line.

5. 113, 224, 335, 446, . . .

6. 4, 6, 9, 13, 18, . . .

7. $\frac{1}{3}, \frac{3}{4}, \frac{5}{5}, \frac{7}{6}, \cdots$

8. $\frac{7}{8}, \frac{6}{7}, \frac{5}{6}, \frac{4}{5}, \cdots$

9. 3, 0, −3, −6, . . .

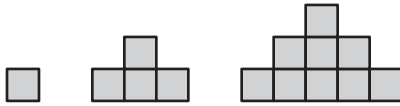10. 1, 4, 9, 16, . . .

11. 2, 5, 11, 23, . . .

12. 2, 3, 5, 7, 11, . . .

The first three objects in a pattern are shown. How many squares are in the next object?

13.

14.
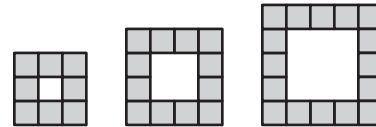
Show the conjecture is false by finding a counterexample.

15. The quotient of two whole numbers is a whole number.

16. The difference of the absolute value of two numbers is positive, meaning $|a| - |b| > 0$.

17. If $m \neq -1$, then $\dfrac{m}{m+1} < 1$.

18. The square root of a number x is always less than x.

LESSON 2.1 **Practice** *continued*
For use with pages 72–78

Write a function rule relating *x* and *y*.

19.

x	1	2	3
y	1	8	27

20.

x	1	2	3
y	-5	-3	-1

21.

x	1	2	3
y	4	3	2

22.

x	1	2	4
y	1	0.5	0.25

23. **Bacteria Growth** Suppose you are studying bacteria in biology class. The table shows the number of bacteria after *n* doubling periods. Your teacher asks you to predict the number of bacteria after 7 doubling periods. What would your prediction be?

n (periods)	0	1	2	3	4	5
billions of bacteria	4	8	16	32	64	128

24. **Chemistry** The half-life of an isotope is the amount of time it takes for half of the isotope to decay. Suppose you begin with 25 grams of Platinum-191, which has a half-life of 3 days. How many days will it take before there is less than 1 gram of the isotope?