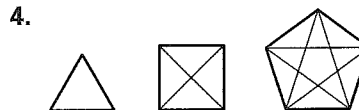
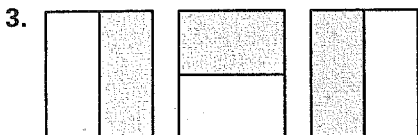
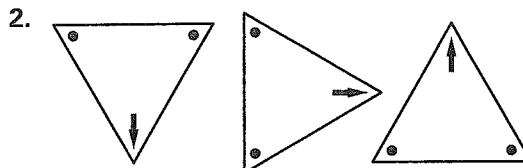


Practice A

For use with pages 3-9

Sketch the next figure in the pattern.



Describe a pattern in the sequence of numbers. Predict the next number.

5. 2, 5, 8, 11, ...

6. 27, 9, 3, 1, ...

7. 123, 234, 345, 456, ...

8. 5, 7, 11, 17, 25, ...

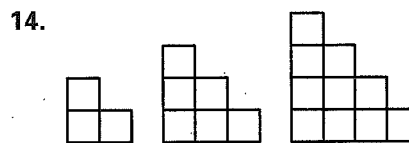
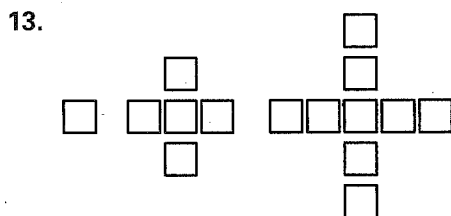
9. $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \dots$

10. $\frac{5}{4}, \frac{4}{6}, \frac{3}{8}, \frac{2}{10}, \dots$

11. 4, 1, -2, -5, ...

12. 1, 4, 9, 16, ...

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



Complete the conjecture based on the pattern you observe in the specific cases.

15. The product of an odd number and an even number is ____?

$3 \cdot 8 = 24$

$6 \cdot 5 = 30$

$11 \cdot 24 = 264$

$102 \cdot 31 = 3162$

16. The sum of an odd number and an even number is ____?

$17 + 22 = 39$

$8 + 37 = 45$

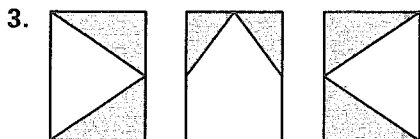
$135 + 48 = 183$

$94 + 85 = 179$

Practice B

For use with pages 3-9

Sketch the next figure in the pattern.



Describe a pattern in the sequence of numbers. Predict the next number.

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

6. 5, 7, 10, 14, 19, ...

7. $\frac{1}{2}, \frac{3}{3}, \frac{5}{4}, \frac{7}{5}, \dots$

8. $\frac{5}{6}, \frac{4}{5}, \frac{3}{4}, \frac{2}{3}, \dots$

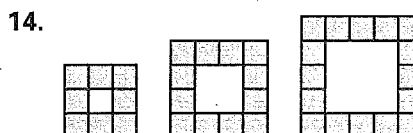
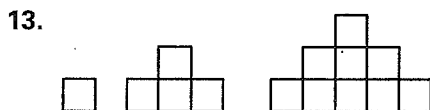
9. 4, 0, -4, -8, ...

10. 4, 9, 16, 25, ...

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?



Show the conjecture is false by finding a counterexample.

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

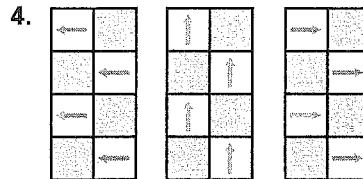
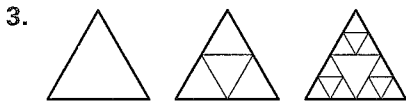
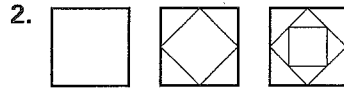
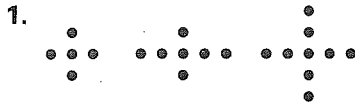
16. The difference of the absolute value of two numbers is positive, meaning $|a| - |b| > 0$.

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

Practice C

For use with pages 3–9

Sketch the next figure in the pattern.



Describe a pattern in the sequence of numbers. Predict the next number.

5. 123, 133, 113, 123, ...

6. 5, 8, 13, 20, 29, ...

7. 22, 20, 17, 13, ...

8. 0.49, 0.64, 0.81, 1, ...

9. 8, 15, 29, 57, ...

10. -7, -4, -1, 2, ...

11. 2, -4, 8, -16, ...

12. $\frac{3}{7}, \frac{6}{5}, \frac{9}{3}, \frac{12}{1}, \dots$

In Exercises 13 and 14, the number of bacteria after n hours is given in the table. Predict the number of bacteria after 8 hours.

13.

n (hours)	1	2	3	4	5
number of bacteria	3	6	12	24	48

14.

n (hours)	1	2	3	4	5
number of bacteria	640	320	160	80	40

In Exercises 15–17, show the conjecture is false by finding a counterexample.

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

16. The absolute value of the sum of two numbers is the sum of their absolute values, meaning $|a + b| = |a| + |b|$.

17. If $m \neq -1$, then $\frac{m}{m-1} > 1$.

