Name_____ Class_____ Date_____

Practice 1-1

Patterns and Inductive Reasoning

Find a pattern for each sequence. Use the pattern to show the next two terms.

1. 17, 23, 29, 35, 41, . . .

2. 1.01, 1.001, 1.0001, . . .

3. 12, 14, 18, 24, 32, . . .

4. 2, -4, 8, -16, 32, . . .

5. 1, 2, 4, 7, 11, 16, . . .

6. 32, 48, 56, 60, 62, 63, . . .

Name two different ways to continue each pattern.

7. 1, 1, 2, _?_

8. 48, 49, 50, _?_

9. 2, 4, _?_

10. A, B, C,**...** ,*Z*,_?_

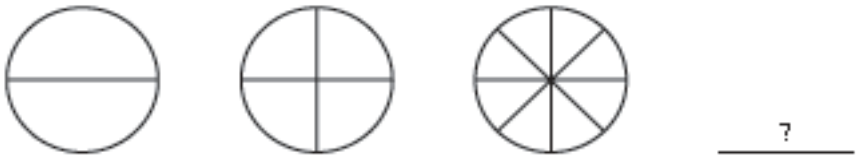
11. D, E, F, _?_

12. A, Z, B,_?_

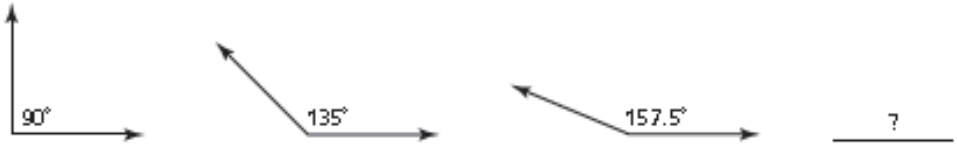
Draw the next figure in each sequence.

13.

14.



15.



Seven people meet and shake hands with one another.

16. How many handshakes occur?

17. Using inductive reasoning, write a formula for the number of handshakes if the number of people is *n*.

The Fibonacci sequence consists of the pattern 1, 1, 2, 3, 5, 8, 13, . . .

18. What is the ninth term in the pattern?

19. Using your calculator, look at the successive ratios of one term to the next. Make a conjecture.

20. List the first eight terms of the sequence formed by finding the differences of successive terms in the Fibonacci sequence.

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