7 Discussion

a. What things did you look for when you tried to discover the rules for the patterns in Questions 5 and 6?

b. Are any of the sequences in Question 6 related to sequences in Question 5? If so, which ones? Explain.

c. What do you think the Pythagoreans would have called the numbers in the sequence in Question 6(b)? Why?

▶ **Each number or object in a sequence is a term and can be labeled with a term number. The term number tells you the order or position of the term in the sequence.**

The **2nd term** in the sequence is **3**.

1, **3**, 6, 10, 15, ...

8 Use Pythagoras' rule to find the next term in the sequence above. What is its term number?

▶ **Using a Table** **You can use a table to help organize the terms and term numbers of a sequence.**

Triangular Numbers

Term number	1	2	3	4	5	...
Term	1	3	6	10	15	...

A rule for this sequence is to start with 1. To find each term after the first, add the term number to the previous term. For example,

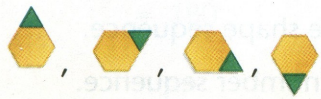
5th term = 4th term + 5 = 10 + 5 = 15

9 **a.** Use the rule to find the next term of the sequence in the table. What is its term number?

b. What would the eighth term be? Explain.

10 ✔ **CHECKPOINT** Make a table showing the term numbers and terms of each sequence. Then find the next two terms of each sequence.

a. 1, 3, 7, 13, 21, ___?___, ___?___, ...

b.  , ___?___, ___?___, ...

✔ **QUESTION 10**

...checks that you can set up a table to help examine and extend a sequence.

HOMEWORK EXERCISES ▶ **See Exs. 1–9 on pp. 22–23.**