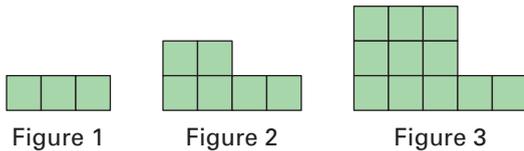
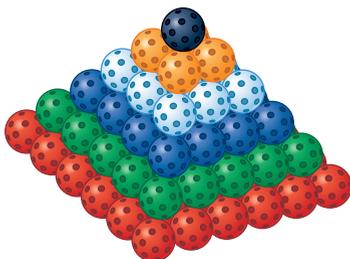


Chapter Self-Test

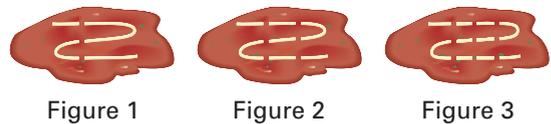
1. a) Use two colours to show which part of the pattern stays the same and which part changes.



- b) Describe the pattern rule in words.
c) Write an algebraic pattern rule.
2. Dylan wrote the sequence 7, 12, 17, 22, ...
- a) Use a table of values to determine a pattern rule for this sequence.
b) Determine the 25th term.
3. Kirsten wrote the sequence 17, 24, 31, 38, ...
- a) Use words and an algebraic expression to describe the pattern rule.
b) Determine the n th term.
c) Determine the 77th term.
4. Mitchell made a triangular pyramid by gluing together small plastic balls.
- a) Use a table of values to determine the total number of balls needed to build a pyramid that is six levels high.
b) How many more balls would he need to increase the number of levels to ten?
c) How many levels would the pyramid have if Mitchell used 165 balls?



5. A long strand of spaghetti is folded twice to form a Z shape. If the spaghetti is cut vertically through the Z, how many pieces will there be after 75 cuts?



6. a) Use the data in these tables of values to draw two scatter plots on the same pair of axes. Use a different colour for each scatter plot.

i)

Term number	Term value
2	6
5	12
7	16
10	22

ii)

Term number	Term value
6	1
10	3
12	4
18	7

- b) For each scatter plot, determine the term number if the term value is 8.
7. John made a pattern with 9 toothpicks in the 1st figure, 14 in the 2nd figure, 19 in the 3rd figure, and 24 in the 4th figure.
- a) Write an algebraic expression for the n th term.
b) Use a scatter plot to determine the figure number of the figure with 94 toothpicks.
c) Check your result in part (b) by substituting for the variable and evaluating the algebraic expression.