Number Patterns and Sequences

4

The rule for my number sequence is **multiply by 3** each time.

1, 3, 9, 27, 81, 243, 729, 2187

List the **first eight** terms in each number sequence and write the rule.
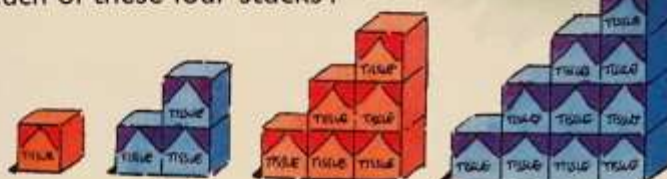
(a) 7, 20, 33, 46, ...
(b) 115, 99, 83, 67, ...
(c) 4, 55, 106, 157, ...
(d) 351, 302, 253, 204, ...
(e) 219, 188, 157, 126, ...
(f) 6, 35, 64, 93, ...
(g) 1·09, 1·34, 1·59, 1·84, ...
(h) 2187, 729, 243, 81, ...

5 Copy and complete each number sequence.

(a) 3, 6, 12, ■, ■, 96
(b) 678, ■, 456, 345, ■, 123
(c) ■, ■, 7, 13, 21, 31
(d) ■, 81, 64, ■, 36, 25
(e) 2, 3, 5, 8, 13, ■, 34
(f) 1, 1, 2, 6, 24, ■, 720

1 Stanley arranges displays of items for sale in a supermarket.

(a) How many boxes are in each of these four stacks?

(b) Draw the fifth and sixth stacks in Stanley's pattern. How many boxes are in each stack?

(c) **Without** drawing stacks, write the number of boxes in the seventh and eighth stacks.

(d) How can you calculate the number of boxes in the ninth stack?

(e) The stacks of boxes are triangular shaped. The numbers 1, 3, 6, 10, ... and so on are called **triangular numbers.**

List the triangular numbers from 1 to 120.