Patterns

1. Circle the core of the pattern.
   (The core of a pattern is the smallest part of it that repeats.)
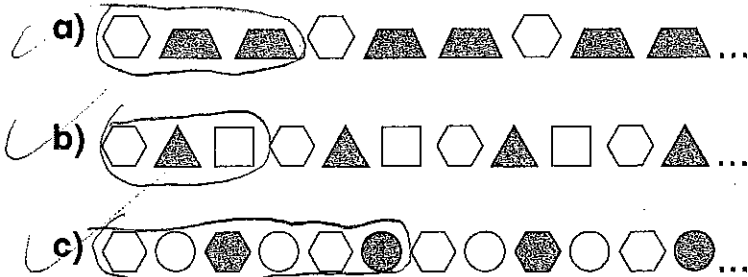
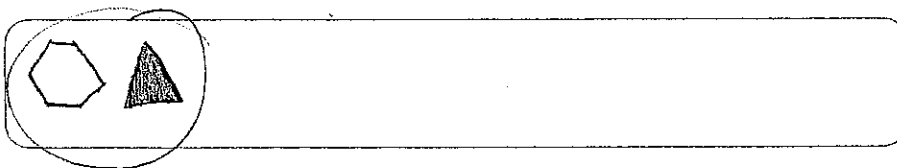   a) ⬡ ▲ ▲ ⬡ ▲ ▲ ⬡ ▲ ▲ ...

   b) ⬡ ▲ □ ⬡ ▲ □ ⬡ ▲ □ ⬡ ▲ ...

   c) ⬡ ○ ⬣ ○ ○ ⬣ ⬡ ○ ⬣ ○ ○ ⬣ ...

2. Describe how each attribute in the pattern for Question 1a) changes in the pattern.

   Colour White hexagon dark pentagon dark pent-
   agon. What about shape?

3. Sketch the next 2 pictures in the pattern for Question 1b).

   ⬡ ▲

4. Draw dots in the 6 boxes below to show a repeating pattern. The number of dots should repeat in a different way than the colour of dots repeats.

5. Continue each pattern.

   a) 5, 9, 13, 17, __21__, __25__

   b) 412, 402, 392, __382__, __372__

   c) 76, 87, 98, __109__, __120__

6. What might the 10th number be in each pattern?

   a) 25, 35, 45,...   _125_
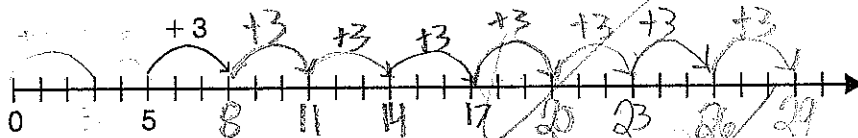
   b) 80, 78, 76,...   _64_
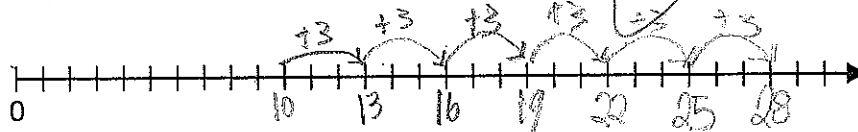
7. Model the pattern on the number line.

   a) 5, 8, 11, 14, 17,...

   b) 10, 13, 16, 19, 22,...

   c) Tell how the 2 pattern models in parts a) and b) are alike. Tell how they are different.

   they are alike because the both go up by 3 each time they are differnt because they start at diffient numbers

8. Create 2 patterns that have 10 as the 4th number. One pattern should be a growing pattern. One should be a shrinking pattern. Write the first 5 numbers for each.

   Pattern 1: _1,3,6,10,15_ ✓

   Pattern 2: _28,21,15,10,6_ ✓

9. Write the first 5 numbers in each pattern.

   a) Start at 14 and go up by 2 each time.
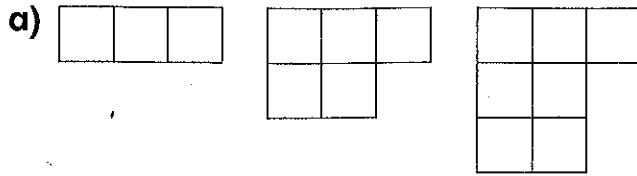
   _14,16,18,20,22_ ✓

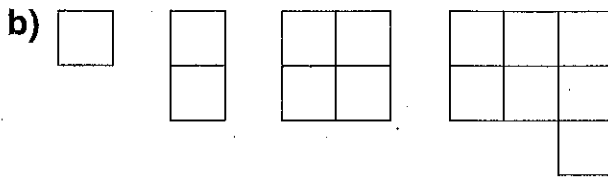   **b)** Start at 114 and go down by 3 each time.

   _114,111,108,105,22_ ✓

   c) Start at 20 and go up by 2, then 3, then 4,... (1 more each time).

   _20,22,25,29,34_ ✓

Leaps and Bounds   Patterns, Diagnostic Tool

10. A pattern rule tells how a pattern starts and how it continues.
Write a pattern rule for the number of squares in each pattern.

a)

Start at _3_ and _2 each time._ ✓

_____

b)

Start at _1_ and _and go up by 2 than_
3 than 4. ✓

11. Write a pattern rule for each pattern.

a) 7, 11, 15, 19, 23,…

add 4 each time ✓

b) 30, 28, 26, 24,…

subtract 2 each ✓

c) 4, 5, 7, 10, 14, 19,…

_____

12. How are the rules for these patterns alike?
How are they different?

Pattern 1:   9, 12, 15, 18, 21,…
Pattern 2:   8, 11, 14, 17, 20,…

they both add 3 each time
they start at 2 different
numbers ✓