PA6-12: Describing and Creating Patterns

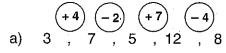
In the first sequence, each number is greater than the one before it. The sequence is always increasing:

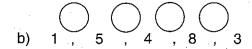
7 10 15 21

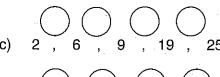
In the second sequence, each number is less than the one before it. The sequence is always decreasing:

25 23 18

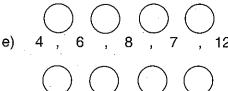
Find the amount by which the sequence increases or decreases. Write a number in the circle, with a + sign if the sequence increases, and a - sign if it decreases. The first one has been done for you:

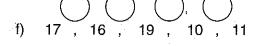


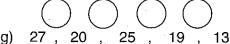














6

2. Match each sequence with the sentence that describes it. This sequence

- a) ... increases by 5 each time.
 - ... increases by different amounts.

9 , 13 , 19 , 23 , 25

13 , 18 , 23 , 28

- b) ... decreases by different amounts.
 - ... decreases by the same amount.

21 , 20 , 18 , 15 , 11

13, 10, 7, 4, 1

BONUS

Α ... increases by 5 each time.

> В ... decreases by different amounts.

... increases by different amounts.

18, 23, 29, 33, 35

27 , 24 , 20 , 19 , 16

24 , 29 , 34 , 39 , 44

... increases and decreases. d) Α

... increases by the same amount.

... decreases by different amounts.

... decreases by the same amount.

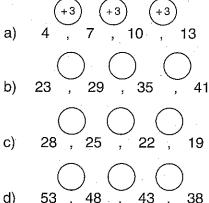
31, 29, 25, 13, 9

10 , 14 , 9 , 6 , 5

18 , 16 , 14 , 12 , 10

8 , 11 , 14 , 17 , 20

3. Write a rule for each pattern (use the words <u>add</u> or <u>subtract</u>, and say what number the pattern starts with):



Start at 4 and add 3.

4. Write a rule for each pattern:

NOTE: One sequence doesn't have a rule – see if you can find this sequence.

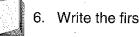
- a) 9 , 14 , 19 , 24
- b) 27 , 19 , 11 , 3
- c) 39 , 31 , 27 , 14 , 9
- d) 81 , 85 , 89 , 93

5. Describe each pattern as increasing, decreasing or repeating:

- a) 1,3,6,9,12,15 _____
- b) 2,8,9,2,8,9
- c) 29, 27, 25, 23, 22
- d) 2,6,10,14,17 __

e) 3,9,4,3,9,4

f) 61,56,51,46,41 ____



6. Write the first five terms in the pattern:

- a) Start at 38 and add 4.
- b) Start at 67 and subtract 6.
- c) Start at 98 and add 7.
- 7. Create an increasing number pattern. Write the rule for your pattern. Do the same for a decreasing number pattern.
- 8. Create a repeating pattern using:
- a) letters
- b) shapes
- c) numbers

9. Create a pattern and ask a friend to find the rule for your pattern.