

ARITHMETIC PROGRESSION

Activity – 5(i)

1. What we have to do?

To verify that the given sequence is an arithmetic progression by paper cutting and pasting method.

2. What is required?

Squared paper, coloured paper, sketch pens, geometry box, glue stick, a pair of scissors

3. Time required: 30 min

4. What do we need to know?

Sequence, terms of a sequence, definition of an arithmetic progression

5. How will you proceed?

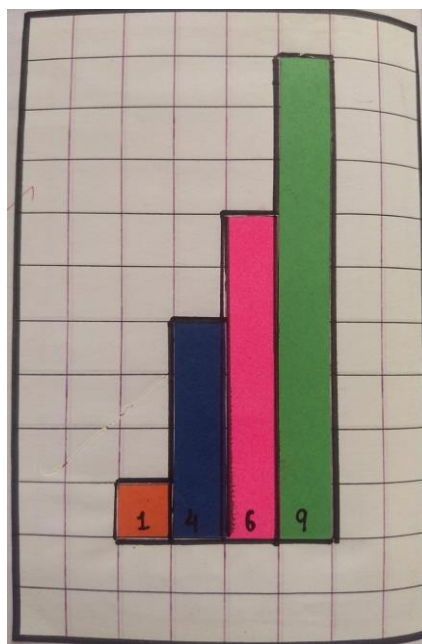
Let the sequence be 1, 4, 7, 10,

- 1) Take a given sequence of numbers say $a_1, a_2, a_3, \dots$
- 2) Cut a rectangular strip from a coloured paper of width 1 cm (say) and length a_1 cm.
- 3) Repeat this procedure by cutting rectangular strips of the same width 1cm and lengths $a_2, a_3, a_4, \dots$ cm.
- 4) Take a squared paper and paste the rectangular strips adjacent to each other in order.
- 5) Repeat the same procedure for sequence 1, 4, 6, 9, ...

6. What have you observed?

From the figures, it is observed that

- a) Sequence 1, the difference between the terms is _____, while
- b) Sequence 2, the difference between the terms is _____



7. What have you learnt?

8. What would you be interested in doing?

Verify whether the following sequence is an A.P or not using the procedure mentioned above:

1, 4, 7, 10, 13, 16

Real Life Application:

The above concept is used in our day to day life incidents viz. charges at the Parking, Taxi fare, buying of groceries from a whole sale market and Fibonacci series, Golden Ratio to name a few...
