ONLINE CLASS STD - X 2020-21 : MATHEMATICS

ALGEBRAIC FORM OF A SEQUENCE

1. *Sequence* 4 , 9 , 16 , 25 , 36 , 49 , ...

Position of the term	1	2	3	4	5	.....	n
Term	4 $=2^2$	9 $=3^2$	16 $=4^2$	25 $=5^2$	36 $= 6^2$	.....	$= (n + 1)^2$

Algebraic form = $(n + 1)^2$

2. *Sequence* 3 , 6 , 10 , 15 , 21 , 28 ,36 ,45 , 55 .....

Position of the term	1	2	3	4	5
Term	3 $= 1 + 2$	6 $= 1 + 2 + 3$	10 $= 1 + 2 + 3+4$	15 $= 1 + 2 + 3+ 4+ 5$	21 $= 1 + 2 + 3 + 4 + 5 + 6$

n-ാംപദം $= 1 + 2 + 3 + 4 + 5 + ... + n + (n + 1)$

Algebraic form = $1 + 2 + 3 + 4 + 5 + ... + n + (n + 1)$

3. *Sequence* 3 , 5 , 7 , 9 , 11 , 13 ,15 ,17 , 19 .....

Position of the term	1	2	3	4	5	.....	n
Term	3 $= 2 + 1$ $= 2 \times 1 + 1$	5 $= 4 + 1$ $= 2 \times 2 + 1$	7 $= 6 + 1$ $= 2 \times 3 + 1$	9 $= 8 + 1$ $= 2 \times 4 + 1$	11 $= 10 + 1$ $= 2 \times 5 + 1$	.....	$2 \times n + 1$

Algebraic form = $2 \times n + 1$

4. *Sequence* 1 , 4 , 9 , 16 , 25 , ...

Position of the term	1	2	3	4	5	.....	n
Term	1 $= 1 \times 1$ $= 1^2$	4 $= 2 \times 2$ $= 2^2$	9 $= 3 \times 3$ $= 3^2$	16 $= 4 \times 4$ $= 4^2$	25 $= 5 \times 5$ $= 5^2$	.....	n^2

Algebraic form = n^2

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ALGEBRAIC FORM OF A SEQUENCE

1. *Make the following number sequences , from the sequence of triangles , quadrilaterals , pentagons , hexagons and so on , of polygons .*

a) *Number of sides*

b) *Sum of inner angles*

c) *Sum of outer angles .*

Answer

a) *Sequence of the number of sides* = 3 , 4 , 5 , 6 , 7 , 8 , ...

Position of the term	1	2	3	4	5	.....	n
Term	3 =1 + 2	4 = 2 + 2	5 = 3 + 2	6 = 4 + 2	7 = 5 + 2	.....	= n + 2

Algebraic form = n + 2

b) *Sequence of the sum of inner angles* = 180^0 , 360^0 , 540^0 , 720^0 , 900^0 , ...

Position of the term	1	2	3	4	5	.....	n
Term	180 =180 x 1	360 = 180 x 2	540 =180 x 3	720 = 180 x 4	900 = 180 x 5	.....	= 180 x n

Algebraic form = 180 x n

c) Sequence of the sum of outer angles = 360^0 , 360^0 , 360^0 , 360^0 , 360^0 , ...

Position of the term	1	2	3	4	5	.....	n
Term	360	360	360	360	360	.....	360

Algebraic form = 360

ONLINE CLASS STD - X 2020-21 : MATHEMATICS

ALGEBRAIC FORM OF A SEQUENCE

1. *Make the following number sequences , from the sequence of equilateral triangles ,squares regular pentagons , regular hexagons and so on , of regular polygons .*

a) *Number of sides*

b) *Sum of inner angles*

c) *One inner angle*

d) *Sum of outer angles*

e) One outer angle

Answer ,

a) *Sequence of the number of sides* = 3 , 4 , 5 , 6 , 7 , 8 , ...

Position of the term	1	2	3	4	5	.....	n
Term	3 =1 + 2	4 = 2 + 2	5 = 3 + 2	6 = 4 + 2	7 = 5 + 2	.....	 = n + 2

Algebraic form = n + 2

b) *Sequence of the sum of inner angles* = 180^0 , 360^0 , 540^0 , 720^0 , 900^0 , ...

Position of the term	1	2	3	4	5	.....	n
Term	180 =180 x 1	360 = 180 x 2	540 =180 x 3	720 = 180 x 4	900 = 180 x 5	.....	 = 180 x n

Algebraic form = 180 x n

c) *Sequence of the measures of inner angle* = 60^0 , 90^0 , 108^0 , 120^0 ,.....

Position of the term	1	2	3	4	5	.....	n
Term	$\frac{180}{3}$	$\frac{360}{4}$	$\frac{540}{5}$	$\frac{720}{6}$	$\frac{900}{7}$	.....	$\frac{180 \times n}{n+2}$

Algebraic form = $\frac{180 \times n}{n+2}$

d) *Sequence of the sum of outer angles* = 360^0 , 360^0 , 360^0 , 360^0 , 360^0 , ...

Position of the term	1	2	3	4	5	.....	n
Term	360	360	360	360	360	.....	360

Algebraic form = 360

e) *Sequence of the measures of outer angle* = 120^0 , 90^0 , 72^0 , 60^0 ,.....

Position of the term	1	2	3	4	5	.....	n
Term	$\frac{360}{3}$	$\frac{360}{4}$	$\frac{360}{5}$	$\frac{360}{6}$	$\frac{360}{7}$	.....	$\frac{360}{n+2}$

Algebraic form = $\frac{360}{n+2}$