WANDOOR GANITHAM STUDY MATERIAL STD X:2021-22

TEXT BOOK QUESTIONS - ARITHMETIC SEQUENCES

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Make the following number sequences, from the sequence of equilateral triangles, squares, regular pentagons and so on, of regular polygons:

Number of sides

3, 4, 5, ...

Sum of inner angles

Sum of outer angles

One inner angle

One outer angle

<u>Answer</u>.

Sequence of the number of sides $= 3, 4, 5, 6, 7, 8, \dots$

Sequence of the sum of inner angles = 180° , 360° , 540° , 720° , 900° , ...

Sequence of the sum of outer angles $=360^{\circ}$, 360° , 360° , 360° , ...

Sequence of the inner angles $=\frac{180^{\circ}}{3}$, $\frac{360^{\circ}}{4}$, $\frac{540^{\circ}}{5}$, $\frac{720^{\circ}}{6}$, ...

 $= 60^{\circ}, 90^{\circ}, 108^{\circ}, 120^{\circ}, \dots$

Sequence of the outer angles $= \frac{360^{\circ}}{3}, \frac{360^{\circ}}{4}, \frac{360^{\circ}}{5}, \frac{360^{\circ}}{6}, \dots$

 $= 120^{0}, 90^{0}, 72^{0}, 60^{0}, \dots$

2 Look at these triangles made with dots.

How many dots are there in each?

Compute the number of dots needed to make the next three triangles.

	Answer.
	3,6,10,15,21,28,
	$\{(1+2),(3+3),(6+4),(10+5),(15+6),(21+7),\}$
3	Write down the sequence of natural numbers leaving remainder 1 on division by 3 and the sequence of natural numbers leaving remainder 2 on division by 3.
	Answer.
	Sequence of natural numbers leaving remainder $1 = 1, 4, 7, 10, 13,$
	Sequence of natural numbers leaving remainder 2 = 2,5,8,11,14,
4	Write down the sequence of natural numbers ending in 1 or 6 and describe it in two other ways.
	Answer .
	1,6,11,16,21,26,31,
	Sequence got by starting with1 and adding 5 repeatedly .
	Sequence of natural numbers leaving remainder 1 on division by 5.
	(Sequence got by multiplying the natural numbers by 5 and subtracting 4 from them .)
5	A tank contains 1000 litres of water and it flows out at the rate of 5 litres per second.
	How much water is there in the tank after each second? Write their numbers as a sequence.
	Answer.
	995, 990, 985, 980,