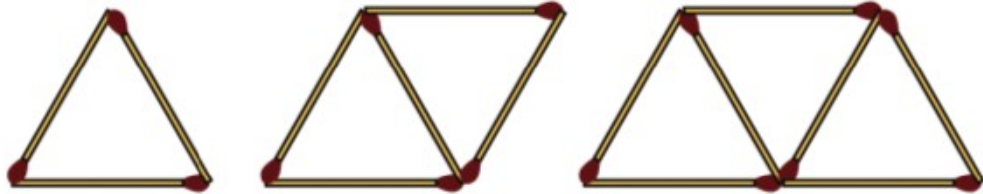


# WANDOOR GANITHAM – S.S.L.C STUDY MATERIAL 2021

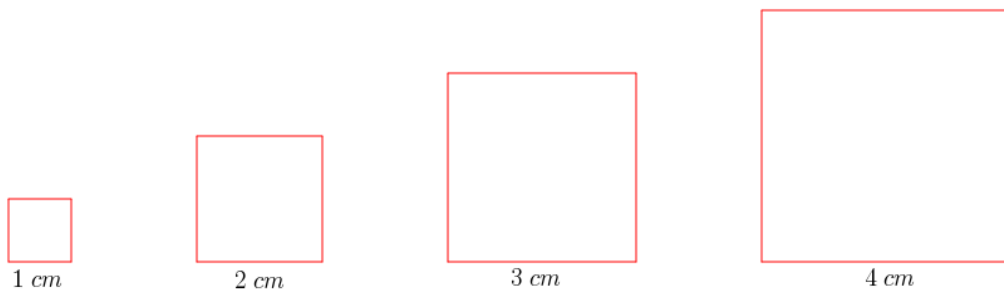
## FOCUS AREA - QUESTION BANK - ARITHMETIC SEQUENCES

1 *Let's make the figures shown in the figure using matchsticks .*



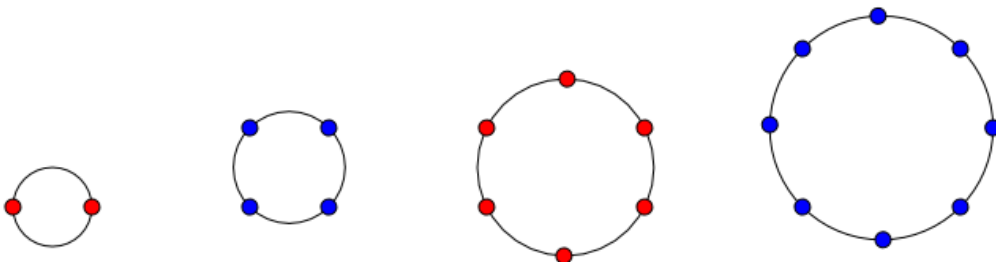
- If we continue this process , how many matchsticks are there in the fifth figure?*
- If we continue this process , what is the sequence of numbers of matchsticks used in each figure ?*
- Check whether the sequence obtained above is an arithmetic sequence or not ?*

2 *In the figure some squares are drawn . Length of the sides of them are also shown in the figure .*



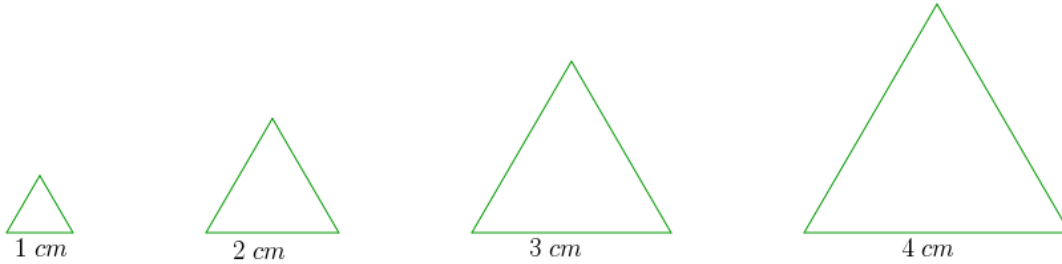
- If we continue this process ,what will be the perimeter of the fifth square ?*
- If we continue this process , what is the sequence of the perimeter of the squares ?*
- Check whether the sequence obtained above is an arithmetic sequence or not ?*

3 *In the figure some dots are marked on the circles*



- a) *If we continue this process , how many dots are there in the fifth circle ?*
- b) *If we continue this process , what is the sequence of the dots in in each circle ?*
- c) *Check whether the sequence obtained above is an arithmetic sequence or not ?*

4 *In the figure some equilateral triangles are drawn . Length of the sides of them are also shown in the figure .*



- a) *If we continue this process ,what will be the perimeter of the fifth triangle ?*
- b) *If we continue this process , what is the sequence of the perimeter of the triangles ?*
- c) *Check whether the sequence obtained above is an arithmetic sequence or not ?*

5 a) *Write the sequence of natural numbers which are multiplied by 3 ?*

b) *Write the sequence of natural numbers which are multiplied by 3 and added to 1 ?*

c) *Check whether the sequence obtained above is an arithmetic sequence or not ?*

6 a) *Write the sequence of natural numbers which are multiplied by 5 ?*

b) *Write the sequence of natural numbers which are multiplied by 5 and subtract 2 from them ?*

c) *Check whether the sequence obtained above is an arithmetic sequence or not ?*

7 a) *Write down the sequence of natural numbers ending in 1 ?*

b) *Check whether the sequence obtained above is an arithmetic sequence or not ?*

8 a) *Write down the sequence of natural numbers ending in 2 or 7 ?*

b) *Check whether the sequence obtained above is an arithmetic sequence or not ?*

9 a) *Write an arithmetic sequence of first term 7 and common difference 4 ?*

b) *What is its 11<sup>th</sup> term ?*

c) *Can the difference between any two terms of this sequence be 100 ? Why ?*

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| 10 | <p>a) Write an arithmetic sequence of first term 10 and common difference 6 ?</p> <p>b) What is its 8<sup>th</sup> term ?</p> <p>c) Can the difference between any two terms of this sequence be 54 ? Why ?</p>  |
| 11 | <p>a) Write an arithmetic sequence of common difference 5 ?</p> <p>b) What is its 9<sup>th</sup> term ?</p> <p>c) Can the difference between any two terms of this sequence be 72 ? Why ?</p>  |
| 12 | <p>a) Write an arithmetic sequence of common difference 10 ?</p> <p>b) What is its 10<sup>th</sup> term ?</p> <p>c) Can the difference between any two terms of this sequence be 63 ? Why ?</p>  |
| 13 | <p>Consider the arithmetic sequence 5, 8, 11, .....</p> <p>a) What is its common difference ?</p> <p>b) What is its 11<sup>th</sup> term ?</p> <p>c) What is the remainder when each term of this sequence is divided by the common difference ?</p> <p>d) What is its algebraic form ?</p>  |
| 14 | <p>Consider the arithmetic sequence 6, 10, 14, .....</p> <p>a) What is its common difference ?</p> <p>b) What is its 15<sup>th</sup> term ?</p> <p>c) What is the remainder when each term of this sequence is divided by the common difference ?</p> <p>d) What is its algebraic form ?</p> |
| 15 | <p>Consider the arithmetic sequence 3, 10, 17, .....</p> <p>a) What is its common difference ?</p> <p>b) What is its 20<sup>th</sup> term ?</p> <p>c) What is its algebraic form ?</p>   |

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| 16 | <p>Consider the arithmetic sequence 1 , 6 , 11 , .....</p> <p>a) What is its common difference ?</p> <p>b) What is its 18<sup>th</sup> term ?</p> <p>c) What is its algebraic form ?</p>  |
| 17 | <p>The algebraic form of an arithmetic sequence is <math>3n + 2</math></p> <p>a) What is its common difference ?</p> <p>b) What is its first term ?</p> <p>c) What is the remainder when each term of this sequence is divided by 3 ?</p> |
| 18 | <p>The algebraic form of an arithmetic sequence is <math>5n + 3</math></p> <p>a) What is its common difference ?</p> <p>b) What is its first term ?</p> <p>c) What is the remainder when each term of this sequence is divided by 5 ?</p> |
| 19 | <p>The algebraic form of an arithmetic sequence is <math>4n - 1</math></p> <p>a) What is its common difference ?</p> <p>b) What is its first term ?</p> <p>c) What is the remainder when each term of this sequence is divided by 4 ?</p> |
| 20 | <p>The algebraic form of an arithmetic sequence is <math>2n - 1</math></p> <p>a) What is its common difference ?</p> <p>b) What is its first term ?</p> <p>c) What is the remainder when each term of this sequence is divided by 2 ?</p> |
| 21 | <p>Consider the arithmetic sequence 5 , 9 , 13 , .....</p> <p>a) What is its common difference ?</p> <p>b) What is its algebraic form ?</p> <p>c) Find the position of 101 in this sequence ?</p>   |

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| 22 | <p>Consider the arithmetic sequence 8 , 13 , 18 , .....</p> <p>a) What is its common difference ?</p> <p>b) What is its algebraic form ?</p> <p>c) Find the position of 203 in this sequence ?</p>   |
| 23 | <p>Consider the arithmetic sequence 4 , 10 , 16 , .....</p> <p>a) What is its common difference ?</p> <p>b) What is its algebraic form ?</p> <p>c) Find the position of 58 in this sequence ?</p>  |
| 24 | <p>Consider the arithmetic sequence 2 , 11 , 20 , .....</p> <p>a) What is its common difference ?</p> <p>b) What is its algebraic form ?</p> <p>c) Find the position of 263 in this sequence ?</p>   |
| 25 | <p>Consider the arithmetic sequence 3 , 10 , 17 , .....</p> <p>a) What is its common difference ?</p> <p>b) What is its algebraic form ?</p> <p>c) Find the position of 136 in this sequence ?</p>   |
| 26 | <p>Consider the arithmetic sequence 7 , 11 , 15, .....</p> <p>a) What is its common difference ?</p> <p>b) What is its algebraic form ?</p> <p>c) Find the position of 123 in this sequence ?</p> <p>d) Is 130 a term of this sequence ? Why ?</p> |
| 27 | <p>Consider the arithmetic sequence 9 , 14 , 19, .....</p> <p>a) What is its common difference ?</p> <p>b) What is its algebraic form ?</p> <p>c) Find the position of 154 in this sequence ?</p> <p>d) Is 170 a term of this sequence ? Why ?</p> |

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| 28 | <p>4<sup>th</sup> term of an arithmetic sequence is 14 and its 9<sup>th</sup> term is 29</p> <p>a) What is its common difference ?</p> <p>b) What is its first term ?</p> <p>c) Find the position of 62 in this sequence ?</p>   |
| 29 | <p>5<sup>th</sup> term of an arithmetic sequence is 31 and its 11<sup>th</sup> term is 67</p> <p>a) What is its common difference ?</p> <p>b) What is its first term ?</p> <p>c) Find the position of 601 in this sequence ?</p>   |
| 30 | <p>10<sup>th</sup> term of an arithmetic sequence is 74 and its 20<sup>th</sup> term is 154</p> <p>a) What is its common difference ?</p> <p>b) What is its first term ?</p> <p>c) Find the position of 474 in this sequence ?</p>   |
| 31 | <p>8<sup>th</sup> term of an arithmetic sequence is 29 and its 15<sup>th</sup> term is 57</p> <p>a) What is its common difference ?</p> <p>b) What is its first term ?</p> <p>c) Find the position of 97 in this sequence ?</p>  |
| 32 | <p>Consider the arithmetic sequence 4, 7, 10, .....</p> <p>a) What is its common difference ?</p> <p>b) What is its algebraic form ?</p> <p>c) Find the position of 16 in this sequence ?</p> <p>d) Check whether the square of any term is a term of this sequence or not ?</p> |
| 33 | <p>Consider the arithmetic sequence 7, 13, 19, .....</p> <p>a) What is its common difference ?</p> <p>b) What is its algebraic form ?</p> <p>c) Find the position of 49 in this sequence ?</p>   |

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|           | <b>d) Check whether the square of any term is a term of this sequence or not ?</b>  |
| <b>34</b> | <p><b>Consider the arithmetic sequence 6 , 11 , 16 , .....</b></p> <p><b>a) What is its common difference ?</b></p> <p><b>b) What is its algebraic form ?</b></p> <p><b>c) Find the position of 36 in this sequence ?</b></p> <p><b>d) Check whether the square of any term is a term of this sequence or not ?</b></p>   |
| <b>35</b> | <p><b>Consider the arithmetic sequence 3 , 13 , 23 , .....</b></p> <p><b>a) What is its common difference ?</b></p> <p><b>b) What is its algebraic form ?</b></p> <p><b>c) Write down the next three terms of this sequence ?</b></p> <p><b>d) Is there any perfect square term in this sequence ? Justify your answer ?</b></p>  |
| <b>36</b> | <p><b>Consider the arithmetic sequence 7 , 12 , 17 , .....</b></p> <p><b>a) What is its common difference ?</b></p> <p><b>b) What is its algebraic form ?</b></p> <p><b>c) Write down the next three terms of this sequence ?</b></p> <p><b>d) Is there any perfect square term in this sequence ? Justify your answer ?</b></p>  |
| <b>37</b> | <p><b>Consider the arithmetic sequence 70 , 67 , 64 , .....</b></p> <p><b>a) What is its common difference ?</b></p> <p><b>b) What is the remainder when each positive term of this sequence is divided by 3 ?</b></p> <p><b>c) Which is the smallest positive number in this sequence ?</b></p> <p><b>d) Which is the largest negative number in this sequence ?</b></p> |
| <b>38</b> | <p><b>Consider the arithmetic sequence 92 , 88 , 84 , .....</b></p> <p><b>a) What is its common difference ?</b></p>  |

- b) *What is the remainder when each positive term of this sequence is divided by 4 ?*
- c) *Which is the smallest positive number in this sequence ?*
- d) *Which is the largest negative number in this sequence ?*

39 *Consider the arithmetic sequence 63 , 58 , 53 , .....*

- a) *What is its common difference ?*
- b) *What is the remainder when each positive term of this sequence is divided by 5 ?*
- c) *Which is the smallest positive number in this sequence ?*
- d) *What is its algebraic form ?*
- e) *How many positive numbers are there in this sequence ?*

40 *Consider the arithmetic sequence 82 , 72 , 62 , .....*

- a) *What is its common difference ?*
- b) *What is the remainder when each positive term of this sequence is divided by 10 ?*
- c) *Which is the smallest positive number in this sequence ?*
- d) *What is its algebraic form ?*
- e) *How many positive numbers are there in this sequence ?*

41 *Consider the arithmetic sequence 6 , 10 , 14 , .....*

- a) *What is its common difference ?*
- b) *What is its algebraic form ?*
- c) *Find the position of the term obtained by adding 40 to its 20<sup>th</sup> term ?*

42 *Consider the arithmetic sequence 7 , 10 , 13 , .....*

- a) *What is its common difference ?*
- b) *What is its algebraic form ?*
- c) *Find the position of the term obtained by adding 27 to its 15<sup>th</sup> term ?*



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| 43 | <p><i>Consider the arithmetic sequence 8 , 14 , 20 , .....</i></p> <p>a) <i>What is its common difference ?</i></p> <p>b) <i>What is its algebraic form ?</i></p> <p>c) <i>Find the position of the term obtained by subtracting 48 from its 40<sup>th</sup> term ?</i></p>  |
| 44 | <p><i>Consider the arithmetic sequence 3 , 8 , 13 , .....</i></p> <p>a) <i>What is its common difference ?</i></p> <p>b) <i>What is its algebraic form ?</i></p> <p>c) <i>Find the position of the term obtained by subtracting 100 from its 30<sup>th</sup> term ?</i></p>  |
| 45 | <p><i>Consider the sequence of two digit numbers which leave a remainder 1 on divisible by 3 .</i></p> <p>a) <i>What is its common difference ?</i></p> <p>b) <i>Which is the smallest number in this sequence ?</i></p> <p>c) <i>How many two digit numbers are there , which leave a remainder 1 on divisible by 3 ?</i></p>     |
| 46 | <p><i>Consider the sequence of three digit numbers which leave a remainder 1 on divisible by 5 .</i></p> <p>a) <i>What is its common difference ?</i></p> <p>b) <i>Which is the smallest number in this sequence ?</i></p> <p>c) <i>How many three digit numbers are there , which leave a remainder 1 on divisible by 5 ?</i></p> |
| 47 | <p><i>Find the following sums .</i></p> <p>a) <math>1 + 2 + 3 + 4 + 5 + \dots + 20</math></p> <p>b) <math>2 + 4 + 6 + 8 + 10 + \dots + 40</math></p> <p>c) <math>5 + 7 + 9 + 11 + 13 + \dots + 43</math></p>   |

48 *Find the following sums .*

a)  $1 + 2 + 3 + 4 + 5 + \dots + 40$

b)  $5 + 10 + 15 + 20 + 25 + \dots + 200$

c)  $7 + 12 + 17 + 22 + 27 + \dots + 202$

49 *Find the following sums .*

a)  $1 + 2 + 3 + 4 + 5 + \dots + 60$

b)  $4 + 8 + 12 + 16 + 20 + \dots + 240$

c)  $5 + 9 + 13 + 17 + 21 + \dots + 241$

d)  $9 + 17 + 25 + 33 + 41 + \dots + 481$

50 *Find the following sums .*

a)  $1 + 2 + 3 + 4 + 5 + \dots + 100$

b)  $3 + 6 + 9 + 12 + 15 + \dots + 300$

c)  $13 + 16 + 19 + 22 + 25 + \dots + 310$

d)  $12 + 15 + 18 + 21 + 24 + \dots + 309$