Algebra II
Lesson #2 Unit 9
Class Worksheet #2
For Worksheets #2 - #4

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Arithmetic Sequences :

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

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Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; d = 5

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; d = 5

The first term is 3.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; d = 5   3,

The first term is 3.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3,

The first term is 3.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3,

The first term is 3. Now add 5 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8,

The first term is 3. Now add 5 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13,

The first term is 3. Now add 5 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18,

The first term is 3. Now add 5 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23,

The first term is 3. Now add 5 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; d = 5   3, 8, 13, 18, 23, 28,

The first term is 3. Now add 5 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

The first term is 3. Now add 5 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$

The first term is 2.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2,

The first term is 2.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2,

The first term is 2.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2,

The first term is 2. Now add 3 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5,

The first term is 2. Now add 3 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8,

The first term is 2. Now add 3 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11,

The first term is 2. Now add 3 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14,

The first term is 2. Now add 3 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17,

The first term is 2. Now add 3 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

The first term is 2. Now add 3 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$

The first term is 18.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18,

The first term is 18.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18,

The first term is 18.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18,

The first term is 18. Now add -2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16,

The first term is 18. Now add -2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14,

The first term is 18. Now add –2 recursively.

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Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12,

The first term is 18. Now add -2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

    1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

    2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

    3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10,

The first term is 18. Now add -2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8,

The first term is 18. Now add -2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

The first term is 18. Now add -2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$

The first term is 5.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5,

The first term is 5.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5,

The first term is 5.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5,

The first term is 5. Now add 0.2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2,

The first term is 5. Now add 0.2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4,

The first term is 5. Now add 0.2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6,

The first term is 5. Now add 0.2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8,

The first term is 5. Now add 0.2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6,

The first term is 5. Now add 0.2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

The first term is 5. Now add 0.2 recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula :

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : a_{n+1}

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} =$

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

General Arithmetic Sequence:

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

General Arithmetic Sequence:

$a_1 ,$

Start with the first term.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

General Arithmetic Sequence:

a_1 ,

Start with the first term. Now add d recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

General Arithmetic Sequence:

$$a_1 , \ a_1 + 1d ,$$

Start with the first term. Now add d recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

General Arithmetic Sequence:

a_1 , $a_1 + 1d$, $a_1 + 2d$,

Start with the first term. Now add d recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

General Arithmetic Sequence:

a_1 , $a_1 + 1d$, $a_1 + 2d$, $a_1 + 3d$,

Start with the first term. Now add d recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

General Arithmetic Sequence:

a_1 , $a_1 + 1d$, $a_1 + 2d$, $a_1 + 3d$, $a_1 + 4d$,

Start with the first term. Now add d recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

General Arithmetic Sequence:

a_1 , $a_1 + 1d$, $a_1 + 2d$, $a_1 + 3d$, $a_1 + 4d$, $a_1 + 5d$,

Start with the first term. Now add d recursively.

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

Recursive Formula : $a_{n+1} = a_n + d$

General Arithmetic Sequence:

a_1 , $a_1 + 1d$, $a_1 + 2d$, $a_1 + 3d$, $a_1 + 4d$, $a_1 + 5d$, ...

Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

Examples:

1. $a_1 = 3$; $d = 5$ 3, 8, 13, 18, 23, 28, …

2. $a_1 = 2$; $d = 3$ 2, 5, 8, 11, 14, 17, …

3. $a_1 = 18$; $d = -2$ 18, 16, 14, 12, 10, 8, …

4. $a_1 = 5$; $d = 0.2$ 5, 5.2, 5.4, 5.6, 5.8, 6, …

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Take a closer look.

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a_1

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a_1 a_2

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a_1 a_2 a_3 a_4 a_5

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Write the recursive and the explicit formulas for each of the following arithmetic sequences.

1. 3, 8, 13, 18, 23, ...   _____

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3. 18, 16, 14, 12, 10, ...   _____

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$a_1 = 3$ and $d = 5$

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Algebra 2   Class Worksheet #2   Unit 9

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  $a_1 = 2$ and $d = 3$ ➡ $a_n = 2 + (n - 1)3 = 2 + 3n - 3 =$

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Algebra 2   Class Worksheet #2   Unit 9

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Algebra 2   Class Worksheet #2   Unit 9

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Arithmetic Sequences : sequences in which there is a common difference, d, between consecutive terms

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Write the recursive and the explicit formulas for each of the following arithmetic sequences.

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Algebra 2   Class Worksheet #2   Unit 9

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Algebra 2   Class Worksheet #2   Unit 9

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Algebra 2   Class Worksheet #2   Unit 9

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Geometric Sequences :

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Geometric Sequences : **sequences in which there is a common ratio, r, between consecutive terms**

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Examples:

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1. $a_1 = 3$; $r = 2$

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The first term is 3. Now multiply by 2 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6,

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Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

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   1. $a_1 = 3$; $r = 2$ 3, 6, 12,

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Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24,

The first term is 3. Now multiply by 2 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48,

The first term is 3. Now multiply by 2 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96,

The first term is 3. Now multiply by 2 recursively.

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2. $a_1 = 2$; $r = -5$ 2, -10,

The first term is 2. Now multiply by -5 recursively.

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Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

2. $a_1 = 2$; $r = -5$ 2, -10, 50,

The first term is 2. Now multiply by -5 recursively.

Geometric Sequences : sequences in which there is a
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Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250,

The first term is 2. Now multiply by -5 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

    1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

    2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250,

The first term is 2. Now multiply by -5 recursively.

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Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

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The first term is 2. Now multiply by -5 recursively.

Geometric Sequences : sequences in which there is a
common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250, -6250, …

The first term is 2. Now multiply by -5 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

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3. $a_1 = 64$; $r = 0.5$

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

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Geometric Sequences : **sequences in which there is a common ratio, r, between consecutive terms**

Examples:

1. $a_1 = 3$; $r = 2$ **3, 6, 12, 24, 48, 96, …**

2. $a_1 = 2$; $r = -5$ **2, -10, 50, -250, 1250, -6250, …**

3. $a_1 = 64$; $r = 0.5$

The first term is 64.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250, -6250, …

3. $a_1 = 64$; $r = 0.5$ 64,

The first term is 64.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250, -6250, …

3. $a_1 = 64$; $r = 0.5$ 64,

The first term is 64.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

    1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

    2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250, -6250, …

    3. $a_1 = 64$; $r = 0.5$ 64,

The first term is 64. Now multiply by 0.5 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250, -6250, …

3. $a_1 = 64$; $r = 0.5$ 64, 32,

The first term is 64. Now multiply by 0.5 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250, -6250, …

3. $a_1 = 64$; $r = 0.5$ 64, 32, 16,

The first term is 64. Now multiply by 0.5 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250, -6250, …

3. $a_1 = 64$; $r = 0.5$ 64, 32, 16, 8,

The first term is 64. Now multiply by 0.5 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250, -6250, …

3. $a_1 = 64$; $r = 0.5$ 64, 32, 16, 8, 4,

The first term is 64. Now multiply by 0.5 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250, -6250, …

3. $a_1 = 64$; $r = 0.5$ 64, 32, 16, 8, 4, 2,

The first term is 64. Now multiply by 0.5 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

    1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

    2. $a_1 = 2$; $r = -5$ 2, -10, 50, -250, 1250, -6250, …

    3. $a_1 = 64$; $r = 0.5$ 64, 32, 16, 8, 4, 2, …

The first term is 64. Now multiply by 0.5 recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

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3. $a_1 = 64$; $r = 0.5$ 64, 32, 16, 8, 4, 2, …

4. $a_1 = 450$; $r = 0.1$

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

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The first term is 450.

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The first term is 450.

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The first term is 450.

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4. $a_1 = 450$; $r = 0.1$ 450,

The first term is 450. Now multiply by 0.1 recursively.

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3. $a_1 = 64$; $r = 0.5$ 64, 32, 16, 8, 4, 2, …

4. $a_1 = 450$; $r = 0.1$ 450, 45,

The first term is 450. Now multiply by 0.1 recursively.

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1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

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4. $a_1 = 450$; $r = 0.1$ 450, 45, 4.5,

The first term is 450. Now multiply by 0.1 recursively.

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4. $a_1 = 450$; $r = 0.1$ 450, 45, 4.5, 0.45,

The first term is 450. Now multiply by 0.1 recursively.

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4. $a_1 = 450$; $r = 0.1$ 450, 45, 4.5, 0.45, 0.045,

The first term is 450. Now multiply by 0.1 recursively.

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    Recursive Formula :

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Recursive Formula : a_{n+1}

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Recursive Formula : $a_{n+1} =$

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Recursive Formula : $a_{n+1} = r\,a_n$

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Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

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Recursive Formula : $a_{n+1} = r\, a_n$

General Geometric Sequence:

a_1 ,

Start with the first term.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

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Recursive Formula : $a_{n+1} = r\,a_n$

General Geometric Sequence:

a_1 ,

Start with the first term. Now multiply by r recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

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Recursive Formula : $a_{n+1} = r\, a_n$

General Geometric Sequence:

a_1 , $a_1 r^1$,

Start with the first term. Now multiply by r recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

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4. $a_1 = 450$; $r = 0.1$ 450, 45, 4.5, 0.45, 0.045, 0.0045, …

Recursive Formula : $a_{n+1} = r\, a_n$

General Geometric Sequence:

a_1 , $a_1 r^1$, $a_1 r^2$,

Start with the first term. Now multiply by r recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

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Recursive Formula : $a_{n+1} = r\,a_n$

General Geometric Sequence:

$$a_1 \ , \ a_1 r^1 \ , a_1 r^2 \ , a_1 r^3 \ ,$$

Start with the first term. Now multiply by r recursively.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

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General Geometric Sequence:

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General Geometric Sequence:

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Start with the first term. Now multiply by r recursively.

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General Geometric Sequence:

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Take a closer look.

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Recursive Formula : $a_{n+1} = r\,a_n$

General Geometric Sequence:

a_1 , $a_1 r^1$, $a_1 r^2$, $a_1 r^3$, $a_1 r^4$, $a_1 r^5$, ...

a_1

Take a closer look.

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Recursive Formula : $a_{n+1} = r\,a_n$

General Geometric Sequence:

$$a_1 \; , \; a_1 r^1 \; , a_1 r^2 \; , a_1 r^3 \; , a_1 r^4 \; , a_1 r^5 \; , ...$$

a_1 a_2

Take a closer look.

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4. $a_1 = 450$; $r = 0.1$ 450, 45, 4.5, 0.45, 0.045, 0.0045, …

Recursive Formula : $a_{n+1} = r\, a_n$

General Geometric Sequence:

$$a_1 \; , \; a_1 r^1 \; , a_1 r^2 \; , a_1 r^3 \; , a_1 r^4 \; , a_1 r^5 \; , ...$$

a_1 a_2 a_3

Take a closer look.

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$$a_1 \; , \; a_1 r^1 \; , a_1 r^2 \; , a_1 r^3 \; , a_1 r^4 \; , a_1 r^5 \; , ...$$

a_1 a_2 a_3 a_4

Take a closer look.

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Recursive Formula :　$a_{n+1} = r\,a_n$

General Geometric Sequence:

$$a_1 \ , \ a_1 r^1 \ , a_1 r^2 \ , a_1 r^3 \ , a_1 r^4 \ , a_1 r^5 , ...$$

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Take a closer look.

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

Examples:

1. $a_1 = 3$; $r = 2$ 3, 6, 12, 24, 48, 96, …

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Algebra 2   Class Worksheet #2   Unit 9

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Algebra 2   Class Worksheet #2   Unit 9

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Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

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Explicit Formula : $a_n = a_1 r^{(n-1)}$

Write the recursive and the explicit formulas for each of the following geometric sequences.

1.   3, 6, 12, 24, 48, ... $a_1 = 3$, $a_{n+1} = 2a_n$; $a_n = 3(2)^{(n-1)}$

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Algebra 2   Class Worksheet #2   Unit 9

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Algebra 2   Class Worksheet #2   Unit 9

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Algebra 2   Class Worksheet #2   Unit 9

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1. 3, 6, 12, 24, 48, ... $a_1 = 3$, $a_{n+1} = 2a_n$; $a_n = 3(2)^{(n-1)}$

2. 2, -10, 50, -250, 1250, ... $a_1 = 2$, $a_{n+1} = -5a_n$; $a_n = 2(-5)^{(n-1)}$

3. 64, 32, 16, 8, 4, ... $a_1 = 64$, $a_{n+1} = 0.5a_n$; $a_n = 64(0.5)^{(n-1)}$

4. 450, 45, 4.5, 0.45, 0.045, ... $a_1 = 450$, $a_{n+1} = 0.1a_n$; $a_n = 450(0.1)^{(n-1)}$

Multiply by 0.1 recursively. ⟹ **$r = 0.1$**

Algebra 2   Class Worksheet #2   Unit 9

Geometric Sequences : sequences in which there is a common ratio, r, between consecutive terms

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