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$$a_1 =$$
$$a_n = a_{n-1}$$

Date _____
Algebra II

Writing Equations of Sequences Recursively

1. Write a recursive equation for the following sequence and use the equation to find the tenth term.

~~14~~
-1, 3, 7, 11, ...

$$a_n = a_{n-1} + 4$$
$$a_1 = -1$$

2. Write a recursive equation for the following sequence and use the equation to find the tenth term.

19, 16, 13, 10, ...

$$a_n = a_{n-1} - 3$$
$$a_1 = 19$$

3. Write a recursive equation for the following sequence and use the equation to find the tenth term.

2, 8, 32, 128, ...

$$a_n = 4a_{n-1}$$
$$a_1 = 2$$

4. Write a recursive equation for the following sequence and use the equation to find the tenth term.

-509, -503, -497, -491, ...

$$a_n = a_{n-1} + 6$$
$$a_1 = -509$$

5. Write a recursive equation for the following sequence and use the equation to find the fifteenth term.

5, -10, 20, -40, 80, ...

$$a_n = 2a_{n-1}$$
$$a_1 = 5$$

6. Write a recursive equation for the following sequence and use the equation to find the twelfth term.

11, 14, 17, 20, 23, ...

$$a_n = a_{n-1} + 3$$

$$a_1 = 11$$

7. Write a recursive equation for the following sequence and use the equation to find the ninth term.

2, 6, 18, 54, ...

$$a_n = 3a_{n-1}$$

$$a_1 = 2$$

8. Write a recursive equation for the following sequence and use the equation to find the 22nd term.

63, 57, 51, 45, ...

$$a_n = a_{n-1} - 6$$

$$a_1 = 63$$

9. Write a recursive equation for the following sequence and use the equation to find the 15th term.

3, -12, 48, -192, ...

$$a_n = -4a_{n-1}$$

$$a_1 = 3$$

10. Write a recursive equation for the following sequence and use the equation to find the 7th term.

-5, -15, -45, -135, ...

$$a_n = 3a_{n-1}$$

$$a_1 = -5$$

11. Write a recursive equation for the following sequence and use the equation to find the 30th term.

-99, -92, -85, -78, ...

$$a_n = a_{n-1} + 7$$

$$a_1 = -99$$