

Comparing Arithmetic and Geometric Sequences

Date _____ Period _____

For each sequence, state if it is arithmetic, geometric, or neither.

1) 1, 3, 6, 10, 15, ...

2) 40, 43, 46, 49, 52, ...

3) $4, \frac{13}{3}, \frac{14}{3}, 5, \frac{16}{3}, \dots$

4) -4, 12, -36, 108, -324, ...

5) 4, 16, 36, 64, 100, ...

6) -29, -34, -39, -44, -49, ...

7) 1, 5, 25, 125, 625, ...

8) 1, 4, 9, 16, 25, ...

9) -34, -26, -18, -10, -2, ...

10) 0, 3, 8, 15, 24, ...

11) $a_n = -163 + 200n$

12) $a_n = 16 + 3n$

13) $a_n = -4 \cdot (-3)^{n-1}$

14) $a_n = -\frac{3}{4} + \frac{3}{2}n$

15) $a_n = -43 + 4n$

16) $a_n = (2n)^2$

$$17) a_n = -43 + 7n$$

$$18) a_n = \frac{n}{2^n}$$

$$19) a_n = -(-3)^{n-1}$$

$$20) a_n = 2 \cdot (-3)^{n-1}$$

$$21) a_n = a_{n-1} + 6$$
$$a_1 = -17$$

$$22) a_n = na_{n-1}$$
$$a_1 = -1$$

$$23) a_n = a_{n-1} \cdot -5$$
$$a_1 = 4$$

$$24) a_n = a_{n-1} + 8$$
$$a_1 = -17$$

$$25) a_n = \frac{2 + a_{n-1}}{2}$$
$$a_1 = -6$$

$$26) a_n = a_{n-1} + 2$$
$$a_1 = 9$$

$$27) a_n = a_{n-1} + 10$$
$$a_1 = -1$$

$$28) a_n = na_{n-1}$$
$$a_1 = 1$$

$$29) a_n = a_{n-1} \cdot \frac{1}{2}$$
$$a_1 = 8$$

$$30) a_n = \frac{2 + a_{n-1}}{2}$$
$$a_1 = -14$$

Comparing Arithmetic and Geometric Sequences

For each sequence, state if it is arithmetic, geometric, or neither.

1) 1, 3, 6, 10, 15, ...

Neither

2) 40, 43, 46, 49, 52, ...

Arithmetic

3) $4, \frac{13}{3}, \frac{14}{3}, 5, \frac{16}{3}, \dots$

Arithmetic

4) -4, 12, -36, 108, -324, ...

Geometric

5) 4, 16, 36, 64, 100, ...

Neither

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Arithmetic

7) 1, 5, 25, 125, 625, ...

Geometric

8) 1, 4, 9, 16, 25, ...

Neither

9) -34, -26, -18, -10, -2, ...

Arithmetic

10) 0, 3, 8, 15, 24, ...

Neither

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 $a_1 = -17$

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23) $a_n = a_{n-1} \cdot -5$
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Geometric

24) $a_n = a_{n-1} + 8$
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Arithmetic

25) $a_n = \frac{2 + a_{n-1}}{2}$
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Neither

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 $a_1 = 9$

Arithmetic

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 $a_1 = -1$

Arithmetic

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 $a_1 = 1$

Neither

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 $a_1 = 8$

Geometric

30) $a_n = \frac{2 + a_{n-1}}{2}$
 $a_1 = -14$

Neither