Bellwork Alg 2B 1-3 hrs Wednesday, January 10, 2018

Write a recursive formula for each sequence.

1. $16, -56, 196, -686, \ldots$

2. $7, 19, 34, 52, \ldots$

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3. $23, 17, 11, 5, \ldots$

4. $9, 45, 270, 1890, \ldots$

Write an explicit formula for each sequence.

5. $-11, -3, 5, 13, \ldots$

6. $250, 360, 490, 640, \ldots$

7. $1.25, 5, 20, 80, \ldots$

8. In the xy –plane, which of the following is true of a circle with equation $(x + 0.5)^2 + (y - 0.5)^2 = 0.5$ and line with equation $x + y = 0$.

A) The line never intersects the circle.
B) The line is tangent to the circle.
C) The line cuts the circle into two arcs of unequal length.
D) The line cuts the circle into two arcs of equal length.

Bellwork Alg 2B 1-3 hrs Wednesday, January 10, 2018 Answers

Write a recursive formula for each sequence.

1. $16, -56, 196, -686, \ldots$

Geometric $r = -3.5$

$a_1 = 16$

$a_n = (a_{n-1})(-3.5)$

2. $7, 19, 34, 52, \ldots$

$n =$ 2 3 4

+12 +15 +18

3(4) 3(5) 3(6)

Neither

Adding next multiple of 3

$a_1 = 7$

$a_n = a_{n-1} + 3(n+2)$

3. $23, 17, 11, 5, \ldots$

Arithmetic $d = -6$

$a_1 = 23$

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

4. $9, 45, 270, 1890, \ldots$

$n =$ 2 3 4

×5 ×6 ×7

Neither

multiply by next integer

$a_1 = 9$

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

Write an explicit formula for each sequence.

5. $-11, -3, 5, 13, \ldots$

Arithmetic $d = 8$

$a_n = -11 + 8(n-1)$

6. $250, 360, 490, 640, \ldots$

$n =$ 1 2 3 4

$(25)(10)$ $(5^2)(10)$

$(36)(10)$ $(6^2)(10)$

$(49)(10)$ $(7^2)(10)$

$(64)(10)$ $(8^2)(10)$

Neither

pattern: perfect squares times 10.

$a_n = (n+4)^2(10)$

7. $1.25, 5, 20, 80, \ldots$

Geometric $r = 4$

$a_n = 1.25(4)^{n-1}$

8. In the xy–plane, which of the following is true of a circle with equation $(x + 0.5)^2 + (y - 0.5)^2 = 0.5$ and line with equation $x + y = 0$.

A) The line never intersects the circle.

B) The line is tangent to the circle.

C) The line cuts the circle into two arcs of unequal length.

D) The line cuts the circle into two arcs of equal length.