Bellwork 6th hour Wednesday, December 20, 2017

Write a recursive formula for each sequence.

1. $32000, 25600, 20480, 16384, \ldots$

2. $13, 25, 41, 61, 85, \ldots$

Write an explicit formula for each.

3. $20, 25, 30, 35, 40, \ldots$

4. $\frac{3}{11}, \frac{5}{12}, \frac{7}{13}, \frac{9}{14}, \ldots$

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Write a recursive formula for each sequence.

1. $32000, 25600, 20480, 16384, \ldots$

mult by (.8)

$a_1 = 32000$

$a_n = (a_{n-1})(.8)$

2. $13, 25, 41, 61, 85, \ldots$

+16 +24

+12 +20

add next multiple of 4

$a_1 = 13$

$a_n = a_{n-1} + 4(n+1)$

n

2nd term added 12 $= 4(n+1)$

3rd term added 16 $= 4(n+1)$

4th term added 20 $= 4(n+1)$

5th term added 24 $= 4(n+1$

Write an explicit formula for each.

3. $20, 25, 30, 35, 40, \ldots$

$n = 1\ 2\ 3\ 4\ 5$

$a_1 = 4 \cdot 5$

$a_2 = 5 \cdot 5$

$a_3 = 6 \cdot 5$

$a_4 = 7 \cdot 5$

$a_5 = 8 \cdot 5$

all terms are some # times 5.

The # being multiplied by 5 is always 3 more than the term #.

$a_n = (n+3)5$

$n = 1\ 2\ 3\ 4$

4. $\frac{3}{11}, \frac{5}{12}, \frac{7}{13}, \frac{9}{14}, \ldots$

numerators are consecutive odd #s.

2 formulas that always give odd #s are

$2n+1$ or $2n-1$

when $n=1$ numerator is 3. $2n+1=3$ when $n=1$

Denominators are all 10 more than the term #.

$a_n = \frac{2n+1}{n+10}$