Bellwork Alg 2 Thursday, September 12, 2019

1. Evaluate each.

a. $\sum_{n=1}^{20}(13+4n)$

b. $\sum_{n=2}^{6}(5n+n^2)$

2. Write this series in sigma notation: $-26+-18+-10+-2+\ldots+134$

3. Write the explicit and recursive formula for this sequence: $64, 96, 144, 216, 324, \ldots$

Bellwork Alg 2 Thursday, September 12, 2019 ANSWERS

1. Evaluate each.

a. $\sum_{n=1}^{20}(13+4n)$ ← ARITHMETIC

$n=20$

$S_{20} = \frac{20}{2}(t_1 + t_{20})$

$t_1 = 13+4(1) = 17$

$t_{20} = 13+4(20) = 93$

$S_{20} = \frac{20}{2}(17+93)$

$S_{20} = 1100$

b. $\sum_{n=2}^{6}(5n+n^2)$ ← NEITHER

$n=2 \rightarrow 5(2)+(2)^2 = 10+4 = 14$

$n=3 \rightarrow 5(3)+(3)^2 = 15+9 = 24$

$n=4 \rightarrow 5(4)+(4)^2 = 20+16 = 36$

$n=5 \rightarrow 5(5)+(5)^2 = 25+25 = 50$

$n=6 \rightarrow 5(6)+(6)^2 = 30+36 = 66$

$14+24+36+50+66$

$= 190$

2. Write this series in sigma notation: $-26+-18+-10+-2+\ldots+134$

Arithmetic SERIES $d=8$

EXPLICIT FORMULA:

$t_n = -26+8(n-1)$

terms: $t_n = -26+8(n-1)$

$134 = -26+8(n-1)$

$+26 \quad +26$

$\frac{160}{8} = \frac{8(n-1)}{8}$

$20 = n-1$

$+1 \quad +1$

$n = 21$

Sigma NOTATION:

$\sum_{n=1}^{21} -26+8(n-1)$

3. Write the explicit and recursive formula for this sequence: $64, 96, 144, 216, 324, \ldots$

Geometric sequence

$r = 1.5$

EXPLICIT: $t_n = 64(1.5)^{n-1}$

RECURSIVE: $t_1 = 64$

$t_n = t_{n-1} \cdot (1.5)$