Sheet 1132 Solutions

NAME: KEY

Period: ____

PRACTICE WITH SUMS FROM SEQUENCES

A. $\sum_{i=1}^{4} (3i+1) =$

$a_1 = 3(1)+1 = 4$

$a_2 = 3(2)+1 = 7$

$a_3 = 10$

$a_4 = 13$

$= 4+7+10+13$

$= \boxed{34}$

B. WRITE in $\sum$ NOTATION

$5+8+11+14+17$

$\sum_{i=1}^{5} 5+(i-1)\cdot 3 = \boxed{\sum_{i=1}^{5} (2+3i)}$

C. FIND SUM FOR ARITHMETIC SEQUENCE WITH

$a_1 = 12$ and $a_{40} = 129$

$S_{40} = \left(\frac{12+129}{2}\right)40 = 141 \cdot 20 = \boxed{2820}$

D. FIND SUM FOR GEOMETRIC SEQUENCE

$3 + 3\left(\frac{1}{4}\right) + 3\left(\frac{1}{4}\right)^2 + 3\left(\frac{1}{4}\right)^3$

$S_4 = 3\left(\frac{1-\left(\frac{1}{4}\right)^4}{1-\frac{1}{4}}\right) = 3\left(\frac{1-\frac{1}{256}}{3/4}\right) = 3\left(\frac{255/256}{3/4}\right) = 3\left(\frac{255}{256}\right)\left(\frac{4}{3}\right)$

$= \boxed{\frac{255}{64}} = 3.984375.$