

Math 1303 - Math in the Liberal Arts

Homework #4 - 2008.02.01

Due Date - 2008.02.08

1. Find at LEAST 5 constants that are known which are usually represented in scientific notation. Give a brief description of each constant and give the value. As an example, the distance that light travels in a second is usually measured in meters per second. The speed of light is approximately 3×10^8 meters per second.

2. Determine if the following sequences are arithmetic, geometric or neither. If the sequence is arithmetic or geometric, write an expression for the general or n th term of the sequence.

a) $1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \dots$

b) $4, -5, -14, -23, -32, -41, -50 \dots$

c) $10, \frac{5}{2}, \frac{5}{8}, \frac{5}{32}, \frac{5}{128}, \frac{5}{512}, \frac{5}{2048}, \dots$

d) $-\frac{1}{3}, -\frac{1}{12}, \frac{1}{6}, \frac{5}{12}, \frac{2}{3}, \frac{11}{12}, \frac{7}{6}, \dots$

e) $10.0, 5.5, 1.0, -2.5, -8.0, -11.5, -17.0, \dots$

f) $2, 1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \frac{1}{32}, \dots$

3. Consider the arithmetic sequence $1, 4, 7, 10, 13, 16, 19, 22, 25, 29, \dots$

a) Find the sum of the first 1242 terms in the sequence.

b) Find the sum of the 123rd through 1242 terms in the sequence.