GEOMETRIC SUMS

1. Find the indicated sum:

    a) $2, 6, 18, ...$ to 5 terms   b) $-1, 3, -9, ...$ to 6 terms
    c) $-2, -10, -50, ...$ to 6 terms   d) $3/16, 3/4, 3, ...$ to 7 terms
    e) $a = 4, l = 324, r = 3$ f) $a = 64, r = -1/4, l = 1/4$
    g) $a = 4, l = 324, r = -3$ h) $1000, 100, 10, ...; n = 7$

2. Find the two values that are not given:

    a) $a = 8, r = -3, n = 5$ b) $a = 3, l = 48, S_n = 33$
    c) $l = 225, r = 5, n = 5$ d) $a = 3, n = 3, S_n = 19/3$
    e) $a = 5/9, r = -3, S_n = -100/9$ f) $a = -56, l = 7/4, n = 6$
    g) $n = 9, r = 2, S_n = 1022$ h) $a = -2, n = 3, S_n = -14$
    i) $a = -2, n = 3, S_n = -1302$ j) $a = 17, r = -1/2, S_n = 187/16$

3. a) The fourth and eighth terms of a sequence of positive numbers in a G.P. are 1/4 and 4 respectively. Find the fifth number.

    b) The third term of a G.P. is 5 and the sixth term is $8/\sqrt{5}$. Find the intervening terms.

    c) The fourth term of a G.P. is 2 and the seventh term is -2. Find the intervening terms.

    d) The product of three real numbers is G.P. is -64. The first is 4 times the third. Find the numbers.

    e) Find the first term of a geometric progression whose common ratio is 2 and whose sixth term is 96.

    f) Find the first term in a geometric progression whose common ratio is 3 and whose fifth term is 324.

    g) The sum of the first 8 terms of a geometric series is 17 times the sum of its first four terms. Find the common ratio.

    h) In a lottery, the first ticket drawn paid a prize of $30,000. Each succeeding ticket paid half as much as the preceding one. If six tickets were drawn, what is the total prize money paid?

    i) The value of a certain rare coin increases 10% each year. If the coin is worth $3.00 now, what is its approximate value in 5 years?

    j) A dealer bought a painting for $20,000 and three years later sold it for $26,620. Assuming the value of the painting increases geometrically each year, find the average rate per year that the picture is increasing.

    k) The half-life of the Uranium isotope is 20.8 days, that is, one-half the given amount of Uranium 230 decomposes very 20.8 days. How much of an initial amount of 1000 grams of the isotope will be left after 208 days?

    l) In 1980 the population of a small rural Saskatchewan town was 840 individuals. Fifteen years later the population of the town had dropped to 600 individuals. Calculate the rate of change in population growth.