

A1. Consider the sequence: $-3, 15, -75, \dots$ Determine t_8 .

B1. A sequence has $t_1 = \frac{1}{2}$ and $t_6 = 2048$. Determine the common ratio, r .

C1. Write the first 5 terms of a geometric sequence with $t_6 = 96$ and $t_{10} = 1536$.

D1. 64 players enter a Rock-Paper-Scissors tournament. When a player loses a match, they're out. How many rounds are played until a winner is declared?

A2. Consider the geometric series: $80 - 40 + 20 - \dots$. Determine t_7 .

E1. Determine the sum of the first 7 terms in the geometric series above.

B2. A geometric sequence has a common ratio $r = \frac{1}{3}$ and $t_5 = \frac{1}{27}$. Determine the first term, t_1 .

C2. Determine the first term, t_1 , and the common ratio, r , in a geometric sequence with $t_4 = 27$ and $t_7 = 729$.

F1. Determine the first term, t_1 , in a geometric series if $S_{10} = 118096$ and the common ratio, $r = 3$.

G1. Write the series: $\sum_{k=1}^5 5(2)^{k-1}$

D2. A doctor prescribes 200 mg of medication on the 1st day of treatment. The dosage is halved each successive day. The medication lasts 7 days. What is the total amount of medication administered?

Consider the geometric series: $50 - 40 + 32 - \dots$ (Use for questions E-I)

E2. Determine the sum of the first 6 terms.

F2. Which term in the sequence above is 13.1072?

G2. Write the series above using sigma notation.

H1. Is the series above convergent or divergent?

I1. Determine the sum of the series above.

J1. In an infinite geometric series, $t_1 = 10$ and the sum of the series is 20. Determine the common ratio, r .

D3. A ball is dropped from a height of 2m to the floor. After each bounce the ball rises to 75% of its previous height. Estimate the total vertical distance the ball travels before coming to rest.