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Algebra 2

Writing Assignment: Geometric Sequences and Series

Each problem is worth 5 points.

Total Points: 50

Answer each of the following problems. Make sure to show your work.

1) What is the common ratio of the following geometric sequence?
5, 15, 45,...

2) What are the next four terms in the following geometric sequence?
5, 15, 45,...

3) List the first four terms of a geometric sequence with $t_1 = 4$ and $t_n = -3t_{n-1}$.

4) Find the sixth term of a geometric sequence with $t_5 = 24$ and $t_8 = 3$.

5) Find the three geometric means between 2 and 162.

6) Find the three geometric means between $\frac{1}{2}$ and 8.

7) Find S_{11} for $1 + 2 + 4 + 8 + \dots$

8) Find S_{15} for $1 + 1.5 + 2.25 + 3.375 + \dots$

9) Find the sum of the following infinite geometric series, if it exists.

$$\frac{1}{2} + \left(-\frac{1}{4}\right) + \frac{1}{8} + \left(-\frac{1}{16}\right) + \dots$$

10) Find the sum of the following infinite geometric series, if it exists.

$$\frac{2}{5} + \frac{12}{25} + \frac{72}{125} + \dots$$



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