

9.2 Geometric Series

Name:

Date:

P 8. Decide if $5 - 10 + 20 - 40 + 80 - \dots$ is a geometric series. If so, give the first term and the ratio between successive terms. If not, explain why not.

P 14. Decide if $3 + 3z + 6z^2 + 9z^3 + 12z^4 + \dots$ is a geometric series. If so, give the first term and the ratio between successive terms. If not, explain why not.

P 20. Say how many terms are in the finite geometric series

$$2(0.1) + 2(0.1)^2 + \cdots + 2(0.1)^{10}$$

and find its sum.

P 24. Find the sum of the infinite geometric series

$$-810 + 540 - 360 + 240 - 160 + \cdots$$

P 26. Find the sum of

$$1 + \frac{z}{2} + \frac{z^2}{4} + \frac{z^3}{8} + \cdots$$

For what values of the variable does the series converge to this sum?