

Geometric

$E: a_n = a_1 \cdot r^{n-1}$

$R: a_n = a_{n-1} \cdot r$

Problems

List the first five terms of each arithmetic sequence.

19.  $a_n = 5 \cdot 2^{n-1}$

5, 10, 20, 40, 80

20.  $b_n = -3 \cdot 3^{n-1}$

-3, -9, -27, -81, -243

21.  $a_n = 40 \left(\frac{1}{2}\right)^{n-1}$

40, 20, 10, 5,  $\frac{5}{2}$

22.  $c_n = 6 \left(-\frac{1}{2}\right)^{n-1}$

6, -3,  $\frac{3}{2}$ ,  $-\frac{3}{4}$ ,  $\frac{3}{8}$

Find an explicit and a recursive formula for each geometric sequence.

31. 2, 10, 50, 250, 1250, ...

$a_n = 2 \cdot 5^{n-1}$

$a_n = a_{n-1} \cdot 5$

32. 16, 4, 1,  $\frac{1}{4}$ ,  $\frac{1}{16}$ , ...

$a_n = 16 \left(\frac{1}{4}\right)^{n-1}$

$a_n = a_{n-1} \cdot \frac{1}{4}$

33. 5, 15, 45, 135, 405, ...

$a_n = 5 \cdot 3^{n-1}$

$a_n = a_{n-1} \cdot 3$

34. 3, -6, 12, -24, 48, ...

$a_n = 3(-2)^{n-1}$

$a_n = a_{n-1} \cdot (-2)$