

Arithmetic and Geometric Sequences

Is each sequence below arithmetic or geometric? If it is arithmetic, give the common difference. If it is geometric, give the common ratio. If it is neither, describe how the sequence behaves.

- [1] 6, 29, 52, 75, 98 ...
- [2] 1, -3, 9, -27, 81 ...
- [3] 18, 6, 2, $\frac{2}{3}$, $\frac{2}{9}$...
- [4] 1, 3, 6, 10, 15 ...

Find the given term in each arithmetic or geometric sequence.

- [5] Arithmetic, 11th term: 5, 3, 1, -1, ...
- [6] Arithmetic, 50th term: $a_1 = 41$, $d = 2$
- [7] Geometric, 12th term: 3, 6, 12, 24, 48, ...
- [8] Geometric, 10th term: $a_1 = 5$, $r = 2$

Generate the first six terms of each arithmetic or geometric sequence below.

- [9] Arithmetic: $a_1 = 32$, $d = 4$
- [10] Geometric $a_1 = 5$, $r = -3$
- [11] Geometric $a_1 = 8$, $r = 1.5$
- [12] Arithmetic $a_1 = -24$, $d = 2.5$

Find the fifth term of each sequence described below.

- [13] A geometric sequence with 7th term = 256 and common ratio = -4
- [14] An arithmetic sequence with 7th term = 80 and common difference = 10
- [15] An arithmetic sequence with 10th term = 75 and 15th term = 115
- [16] A geometric sequence with 4th term = 5400 and 6th term = 7776