

Determine each unknown term in the given arithmetic sequence using the explicit formula.

$$a_n = a_1 + d(n - 1)$$

Example: Determine the 20th term of the sequence 1, 4, 7, . . .

1st term: 1

Common difference: $d = 2^{\text{nd}} - 1^{\text{st}} = 4 - 1 = 3$

$$a_{20} = 1 + 3(20 - 1)$$

$$a_{20} = 1 + 3(19)$$

$$a_{20} = 1 + 57$$

$$a_{20} = 58$$

1. Determine the 30th term of the sequence
-10, -15, -20, . . .

2. Determine the 50th term of the sequence
100, 92, 84, . . .

3. Determine the 42nd term of the
sequence 12.25, 14.50, 16.75, . . .

4. Determine the 25th term of the sequence
3.3, 4.4, 5.5, . . .

Determine each unknown term in the given geometric sequence using the explicit formula. Round your answer to the nearest hundredth when necessary.

$$g_n = g_1 \cdot r^{n-1}$$

Example: Determine the 15th term of the sequence 0.125, -0.250, 0.500, ...

1st term: 0.125

Common ratio: $r = \frac{2^{\text{nd}}}{1^{\text{st}}} = \frac{-0.250}{0.125} = -2$

$$g_{15} = 0.125 \cdot (-2)^{15-1}$$

$$g_{15} = 0.125 \cdot (-2)^{14}$$

$$g_{15} = 0.125 \cdot 16384$$

$$g_{15} = 2,048$$

5. Determine the 10th term of the sequence
3, 6, 12, ...

6. Determine the 15th term of the sequence
1, -2, 4, ...

7. Determine the 18th term of the sequence
3, 9, 27, ...

8. Determine the 12th term of the sequence
4, 5, 6.25, ...