

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: $4 - 1 = 3$

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

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

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

$$a_{20} = 58$$

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: $\frac{-0.250}{0.125} = -2$

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

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

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

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

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

6. Determine the 20th 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, ...