

Geometric Sequence - Worksheet

1. Is $-2, 2, -2, 2, \dots$ a geometric sequence? Give reasons.
2. Is $\frac{1}{3}, 1, \frac{1}{9}, 3, \frac{1}{27}, 9, \dots$ a geometric sequence? Give reasons.
3. If $a_3 = 9$ and $a_7 = 81$ for a geometric sequence $\{a_n\}$, find the common ratio r .
4. If $a_1 = 8$ and the common ratio is $r = \frac{1}{2}$, find n for which $a_n = r$.
5. If $a_n = \alpha$ and $a_m = \beta$ for an arithmetic sequence $\{a_n\}$, the common ratio r and the first term.
6. Find the first term and common ratio of the sequence $\{\alpha e^{kn}\}$.
7. If the m th term of the sequence $\{\alpha e^{kn}\}$ is equal to twice the first term, find the value of k .
8. Bill throws a ball from the terrace of a 60 m building. In each bounce the ball attains a vertical height that is 25% of the previous height. Find the distance travelled by the ball after the 2nd bounce.
9. A pendulum swings through an arc of 4 meters, where on each successive swing the length of the arc is 0.82 of the previous length. Find the length after 6 swings.
10. A population of bacteria doubles in number every 3 hours. If initially the population is 1000 bacteria, when does it become 5000?