

1. Some of the first terms of an arithmetic sequence are $-2, 1, 4, 7, \dots$. Which one of the followings is the general term of this sequence?
- A) $n+3$ B) $-2+n$
 C) $2-3n$ D) $-2+3n$
 E) $-5+3n$
2. The sequence $x-1, 2x+5, 5x+1, \dots$ is an arithmetic sequence. What is the sum of the first 10 terms of this sequence?
- A) 495 B) 510 C) 520 D) 535 E) 540
3. The first term of a geometric sequence is 64 and the common ratio of this sequence is $\frac{1}{4}$. If the n^{th} term of this sequence is $\frac{1}{4}$, then $n = ?$
- A) 4 B) 5 C) 6 D) 8 E) 9
4. If the first and eighth terms of an arithmetic sequence are 4 and 25, respectively, what is the common difference of this arithmetic sequence?
- A) 6 B) 5 C) 4 D) 3 E) 2
5. (a_n) is an arithmetic sequence. If $a_8 = 15$ and $a_3 = 7$, then $a_1 + a_{10} = ?$
- A) 8 B) 15 C) 22 D) 44 E) 60
6. If the sum of the first twelve terms of an arithmetic sequence is 30 and the sum of the first eight terms is 4, then what is the third term of this sequence?
- A) -1 B) 0 C) 1 D) 3 E) 5
7. If the fourth term of a geometric sequence is m and the fifth term is n , then what is the first term of this geometric sequence in terms of m and n ?
- A) $\frac{m^4}{n^3}$ B) $\frac{m^3}{n^3}$ C) $\frac{m}{n}$ D) $\frac{n}{m}$ E) $\frac{n^4}{m^3}$
8. If $\sqrt{2}, a, \sqrt{18}$ are the three consecutive terms of a geometric sequence, what is the value of a ?
- A) $2\sqrt{2}$ B) $\sqrt{3}$ C) $\sqrt{6}$ D) 3 E) $3\sqrt{3}$
9. a_n is a geometric sequence with positive terms. If $a_3 = 3$ and $a_7 = 27$, find $a_{15} = ?$
- A) 3^5 B) 3^6 C) 3^7 D) 3^9 E) 3^{10}
10. The fourth and the tenth terms of an arithmetic sequence are -8 and 10 , respectively. Find the sum of the first ten terms.
- A) -45 B) -35 C) 81 D) 125 E) 135
11. The fourth and the eighth terms of a geometric sequence are 9 and $\frac{1}{9}$, respectively. Find a_9 .
- A) 3^{-9} B) 3^{-10} C) 3^{-11} D) 3^{-12} E) 3^{-13}
12. The first term of an arithmetic sequence a_n is -3 and the sum of the first fifteen terms is 165. Find a_8 .
- A) 7 B) 9 C) 11 D) 13 E) 15