

1 mark questions : Some models

- 1) The difference between 5 th term and 10 th term of an arithmetic sequence is 18. What is the difference between 20 th term and 30 th term of this sequence .
 (a) 100 (b) 50 (c) 180 (d) 36
- 2) Algebraic form of an arithmetic sequence is $3n + 4$. What is the difference between the first and last of eight consecutive terms of this sequence ?
 (a) 21 (b) 50 (c) 18 (d) 36
- 3) The angles of a 15sided polygon are in an arithmetic sequence.Which angle comes in the middle ?
 (a) 130 (b) 156 (c) 118 (d) 65
- 4) How much the sum of first 10 even numbers is greater than the sum of first 10 odd numbers?
 (a) 10 (b) 11 (c) 20 (d) 25
- 5) What is the mean of first 10 odd numbers?
 (a) 12 (b) 11 (c) 10 (d) 25
- 6) There are 11 multiples of 9 below 100. What is the median of these numbers ?
 (a) 9 (b) 27 (c) 38 (d) 54
- 7) Sum of first n even numbers is $n(n + 1)$. How many odd numbers from the beginning in the order makes the mean 51
 (a) 50 (b) 60 (c) 39 (d) 54
- 8) Angles of a right triangle are in an arithmetic sequence .Which is the smallest angle ?
 (a) 50° (b) 60° (c) 30° (d) 40°
- 9) Algebraic form of an arithmetic sequence is $2 - 3n$. What is its ccommon difference ?
 (a) 2 (b) 3 (c) -2 (d) -3
- 10) At what position 2 comes in the sequence $\frac{1}{11}, \frac{2}{11}, \frac{3}{11} \dots$ as a term ?
 (a) 21 (b) 32 (c) 22 (d) 17
- 11) Sum of the first and 25 th terms of an arithmetic sequence is 56. What is its 13 term ?
 (a) 21 (b) 28 (c) 14 (d) 30

Answers and Explanation

- 1) a) 36
b) $5d = 18 \rightarrow 10d = 36$
- 2) a) Algebraic form is $3n + 2$. Common difference = 3
b) $7d = 7 \times 3 = 21$
- 3) a) In an arithmetic sequence of 15 terms, x_8 is the middle term.
b) Angle sum is $(15 - 2) \times 180 = 13 \times 180$
middle term is $\frac{13 \times 180}{15} = 13 \times 12 = 156$
- 4) a) Sum of first n odd numbers is n^2 , sum of first n even numbers is $n(n + 1)$. Difference is n
b) 10
- 5) a) Sum of first n odd numbers is n^2
b) Mean = $\frac{n^2}{n} = n$
Mean = $\frac{10^2}{10} = 10$
- 6) a) 9, 18, 27 \dots , 99
b) Middle term is $x_6 = 54$
median = 54
- 7) a) Mean = $\frac{n(n+1)}{n} = n + 1$
b) $n + 1 = 51 \rightarrow n = 50$
- 8) a) Angles are $f - d, f, f + d$.
 $f - d + f + f + d = 180, 3f = 180, f = 60$
Largest angle is $90^\circ, f + d = 90, 60 + d = 90, d = 30$
b) Smallest angle is $60 - 30 = 30^\circ$
- 9) a) In $x_n = an + b$ common difference is the coefficient of n
b) $d = -3$
- 10) a) $x_n = \frac{n}{11}$
b) $x_{22} = \frac{22}{11} = 2$
- 11) a) In an arithmetic sequence having a definite number of terms sum of the terms equidistant from both ends are equal. If there is a middle term, it will be the half of pair sum
b) $x_{13} = \frac{56}{2} = 28$