EduSahara™ Assignment

Name : Arithmetic Progressions Miscellaneous

Chapter : Arthimetic Progressions

Grade : CBSE Grade X

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1. The $t_{15}$ of an A.P. is 79 and the $t_5$ is 29 . Find $t_{18}$.

   (i) 95 (ii) 96 (iii) 93 (iv) 94 (v) 91

2. The $t_{10}$ of an A.P. is $\frac{62}{15}$ and the $t_{13}$ is $\frac{71}{15}$ . Find $t_{20}$.

   (i) $\frac{92}{17}$ (ii) 6 (iii) $\frac{92}{13}$ (iv) $\frac{92}{15}$ (v) $\frac{94}{15}$

3. Find the sum of first 71 natural numbers

   (i) 2554 (ii) 2557 (iii) 2556 (iv) 2558 (v) 2555

4. Find the next 4 terms of the following A.P.
   $(6a+2b), 7a, (8a-2b), \ldots$

   (i) $(3a-6b),(4a-8b),(5a-10b),(6a-12b)$ (ii) $14a,(15a-2b),(16a-4b),(17a-6b)$

   (iii) $(10a-6b),(11a-8b),(12a-10b),(13a-12b)$ (iv) $(15a-2b),(16a-4b),(17a-6b),(18a-8b)$

   (v) $(9a-4b),(10a-6b),(11a-8b),(12a-10b)$

5. Find $t_n$ of the A.P $4, 5, 6, 7, 8, \ldots$

   (i) $(n+7)$ (ii) $(3n+3)$ (iii) $(n+4)$ (iv) $(n+3)$ (v) $(-2n+3)$

6. Find $t_n$ of the A.P $\frac{7}{2}, 4, \frac{9}{2}, 5, \frac{11}{2}, \ldots$

   (i) $(-\frac{1}{2}n+3)$ (ii) $(\frac{1}{2}n+\frac{7}{2})$ (iii) $(\frac{1}{2}n+3)$ (iv) $(\frac{9}{2}n+3)$ (v) $(\frac{1}{2}n+\frac{13}{2})$

7. The $t_5$ of an A.P is $p$ and $t_6$ is $q$ . Find $t_{16}$ and $t_n$.

   (i) $(-9p+10q),(-pn+6p+qn-5q)$ (ii) $(-10p+11q),(-pn+6p+qn-5q)$

   (iii) $(-10p+11q),(-pn+p+qn-q)$ (iv) $(-5p+7q),(-pn+11p+qn-9q)$

   (v) $(-11p+12q),(-pn+5p+qn-4q)$

8. Determine k so that $(9k+9), (9k+7)$ and
   $(2k+1)$ are the consecutive terms of an A.P

   (i) $(\frac{-4}{9})$ (ii) $(\frac{-2}{7})$ (iii) $(\frac{-4}{7})$ (iv) $(\frac{-6}{7})$ (v) $(\frac{-4}{5})$

9. The product of two numbers is 4884 and their arithmetic mean is 70 .
   Find the two numbers.

   (i) $(66,73)$ (ii) $(66,74)$ (iii) $(76,68)$ (iv) $(69,74)$ (v) $(67,75)$

10. Find the sum of all natural numbers between 1 and 100 which are multiples of 6?

    (i) 816 (ii) 817 (iii) 819 (iv) 815 (v) 813

11. Find the sum of all natural numbers between 100 and 200 which are multiples of 4?

(i) 3599 (ii) 3602 (iii) 3600 (iv) 3601 (v) 3598

12. Find the sum of the following A.P. series
$(x+6y), 10y, (-x+14y) \ldots$ to 5 terms

(i) $(-9x+36y)$ (ii) $(-x+44y)$ (iii) $(-7x+48y)$ (iv) $(-5x+70y)$ (v) $(-3x+52y)$

13. Find $t_n$ of the A.P $9, 17, 25, \ldots$

(i) $(5n+1)$ (ii) $(8n+10)$ (iii) $(11n+1)$ (iv) $(8n+1)$ (v) $(8n+9)$

14. If $S_{50}$ and $S_{40}$ of an A.P. are 11125 and 7100 respectively, then $S_{90} =$

(i) 36228 (ii) 36225 (iii) 36223 (iv) 36226

15. If $x \neq y$ and the sequences $x, a_1, a_2, y$ and $x, b_1, b_2, y$ each are in A.P., then $\frac{a_2-a_1}{b_2-b_1} =$

(i) $\frac{3}{2}$ (ii) 1 (iii) $\frac{4}{3}$ (iv) $(\frac{-3}{4})$ (v) $\frac{2}{3}$

16. If there are n arithmetic means between a and b, the common difference d =

(i) $\frac{(n-1)}{(a+b)}$ (ii) $\frac{(a-b)}{(n+1)}$ (iii) $\frac{(a+b)}{(n+1)}$ (iv) $\frac{(b-a)}{(n-1)}$ (v) $\frac{(b-a)}{(n+1)}$

17. The sum of first n natural number is

(i) $\frac{n^2(n+1)^2}{4}$ (ii) $\frac{(n)(n-1)}{2}$ (iii) $\frac{(n)(n+1)}{2}$ (iv) $\frac{(n)(n+1)(2n+1)}{6}$ (v) $\frac{(n-1)(n+1)}{2}$

18. The measures of the interior angles of a convex polygon are in A.P.
If the smallest angle is 130 and the largest angle is 150,
then the number of sides of the polygon is

(i) 7 (ii) 9 (iii) 10 (iv) 8 (v) 12

19. If the $t_n$ of an A.P is $(n+7)$, find $S_n$

(i) $\frac{(1)(n^2+n)}{2} + 7n$ (ii) $\frac{(7)(n^2+n)}{2} + 8n$ (iii) $\frac{(7)(n^2+n)}{2} + 5n$ (iv) $\frac{(8)(n^2+n)}{2} + 6n$

(v) $\frac{(5)(n^2+n)}{2} + 5n$

20. Determine $t_5$ and $t_n$ of an A.P. whose $t_2$ is 8 and $t_{10}$ is 32.

(i) $15; 2$ (ii) $19; (5n+2)$ (iii) $18; (3n+7)$ (iv) $16; (3n+5)$ (v) $17; (3n+2)$

## Assignment Key

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|---|---|---|---|---|---|
| 1) (iv) | 2) (iv) | 3) (iii) | 4) (v) | 5) (iv) | 6) (iii) |
| 7) (ii) | 8) (iii) | 9) (ii) | 10) (i) | 11) (iii) | 12) (iv) |
| 13) (iv) | 14) (ii) | 15) (ii) | 16) (v) | 17) (iii) | 18) (ii) |
| 19) (i) | 20) (v) | | | | |

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