EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Arthimetic Progressions

Grade : CBSE Grade X

1. The sum of first three terms of an A.P. is $\frac{17}{2}$ while their product is $\frac{1615}{72}$. Find the A.P.

(i) $\frac{5}{2}, \frac{17}{6}, \frac{19}{6}, \ldots$ (ii) $\frac{5}{2}, \frac{7}{2}, \frac{9}{2}, \ldots$ (iii) $\frac{5}{2}, \frac{13}{6}, \frac{11}{6}, \ldots$ (iv) $\frac{5}{4}, \frac{19}{12}, \frac{23}{12}, \ldots$ (v) $\frac{7}{2}, \frac{23}{6}, \frac{25}{6}, \ldots$

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

3. If $a = \frac{31}{12}$ and $b = \frac{13}{4}$, the arithmetic mean of a and b =

(i) $\frac{5}{2}$ (ii) $\frac{35}{12}$ (iii) $\frac{7}{2}$ (iv) $\frac{37}{12}$ (v) $\frac{11}{4}$

4. Given $t_n = 62$, $n = 13$, $S_n = 416$, find a

(i) 0 (ii) 1 (iii) 3 (iv) 5 (v) 2

5. Find S_{23} of the A.P. $\frac{5}{3}, \frac{38}{21}, \frac{41}{21}, \ldots =$

(i) $\frac{522}{7}$ (ii) $\frac{1564}{19}$ (iii) 68 (iv) $\frac{1564}{21}$ (v) $\frac{1562}{21}$

6. The sum of first n natural number is

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

7. Given $a = 7$, $d = 4$, $n = 10$, find S_n

(i) 247 (ii) 251 (iii) 250 (iv) 253 (v) 249

8. Given $t_n = 68$, $a = 8$, $n = 11$, find S_n

(i) 418 (ii) 420 (iii) 417 (iv) 419 (v) 416

9. Find the common difference and next four terms of the following A.P. $3, 10, 17, \ldots =$

(i) $8; 24, 31, 38, 45$ (ii) $7; 24, 31, 38, 45$ (iii) $8; 21, 27, 33, 39$ (iv) $8; 27, 35, 43, 51$

10. The measures of the interior angles of a convex polygon are in A.P. If the smallest angle is 45 and the largest angle is 135, then the number of sides of the polygon is

(i) 7 (ii) 5 (iii) 4 (iv) 3 (v) 2

11. Given $a = 8$, $d = 3$, $n = 8$, find t_n

(i) 32 (ii) 30 (iii) 27 (iv) 29 (v) 28

12. Find t_{23} of the A.P. $4, 6, 8, \ldots =$

(i) 50 (ii) 47 (iii) 46 (iv) 49 (v) 48

13. If S_{30} and S_{70} of an A.P. are 2700 and 14700 respectively, then $S_{100} =$

(i) 29997 (ii) 30001 (iii) 30003 (iv) 30000

14. How many terms of the A.P. $\frac{8}{9}, \frac{49}{45}, \frac{58}{45}, \ldots$ are needed to make the sum $\frac{358}{15}$?

(i) 13 (ii) 14 (iii) 12 (iv) 10 (v) 11

15. Insert 1 arithmetic means between $\frac{9}{4}$ and $\frac{71}{28}$.

(i) $\frac{59}{28}$ (ii) $\frac{49}{20}$ (iii) $\frac{75}{28}$ (iv) $\frac{67}{28}$ (v) $\frac{85}{36}$

16. Find S_7 of the A.P. $8, 16, 24, \ldots =$

(i) 222 (ii) 227 (iii) 225 (iv) 223 (v) 224

17. Determine t_{12} of an A.P whose t_{15} is 116 and common difference is 8

(i) 90 (ii) 91 (iii) 95 (iv) 92 (v) 93

18. Find t_{10} of the A.P. $\frac{7}{4}, 2, \frac{9}{4}, \ldots =$

(i) 1 (ii) 7 (iii) 4 (iv) 3 (v) 5

19. The common difference of the A.P. $\frac{1}{7}, \frac{10}{21}, \frac{17}{21}, \ldots =$

(i) $\frac{1}{3}$ (ii) $(\frac{-1}{3})$ (iii) 1 (iv) $\frac{1}{5}$

20. The first term of the A.P. $\frac{5}{8}, \frac{43}{56}, \frac{51}{56}, \frac{59}{56}, \frac{67}{56}, \ldots =$

(i) $\frac{43}{56}$ (ii) $\frac{67}{56}$ (iii) $\frac{5}{8}$ (iv) $\frac{59}{56}$ (v) $\frac{51}{56}$

21. Given $a = 6$, $d = 4$, $S_n = 390$, find n

(i) 13 (ii) 11 (iii) 12 (iv) 15 (v) 14

22. Find the sum of the following A.P. series
$(6x+4y), (5x+11y), (4x+18y) \ldots$ to 8 terms

(i) $(20x+228y)$ (ii) $(-15x+197y)$ (iii) $(-27x+189y)$ (iv) $(20x+182y)$ (v) $(22x+168y)$

23. Insert 2 arithmetic means between 3 and 6 .

(i) 3,3 (ii) 4,5 (iii) 6,9 (iv) 5,7 (v) 1,-1

24. Which term of the A.P. $\frac{3}{4}, \frac{13}{12}, \frac{17}{12}, \ldots$ is $\frac{23}{4}$?

(i) t_{15} (ii) t_{17} (iii) t_{16} (iv) t_{19} (v) t_{13}

25. If a = 124 and b = 142 ,
the arithmetic mean of a and b =

(i) 136 (ii) 133 (iii) 131 (iv) 132 (v) 134

Assignment Key

1) (i)	2) (iv)	3) (ii)	4) (v)	5) (iv)	6) (v)
7) (iii)	8) (i)	9) (ii)	10) (iii)	11) (iv)	12) (v)
13) (iv)	14) (iii)	15) (iv)	16) (v)	17) (iv)	18) (iii)
19) (i)	20) (iii)	21) (i)	22) (i)	23) (ii)	24) (iii)
25) (ii)					