EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Progressions

Grade : SSC Grade X

1. Given $t_n = 89$, n $= 13, S_n = 611$, find a

   (i) 6 (ii) 4 (iii) 5 (iv) 7 (v) 2

2. Determine t_6 of a G.P. whose t_8 is $\frac{2}{2470629}$ and common ratio is $\frac{1}{7}$.

   (i) $\frac{2}{50423}$ (ii) 0 (iii) $\frac{2}{50421}$ (iv) $\frac{2}{50419}$ (v) $\frac{4}{50421}$

3. The t_8 of the G.P. $4, 20, 100, \ldots =$

   (i) 312501 (ii) 312500 (iii) 312503 (iv) 312499 (v) 312497

4. The common difference of the A.P. $\frac{1}{8}, \frac{3}{8}, \frac{5}{8}, \ldots =$

   (i) $\frac{1}{4}$ (ii) $\frac{1}{6}$ (iii) $\frac{3}{4}$ (iv) $(\frac{-1}{4})$ (v) $\frac{1}{2}$

5. The sum of first three terms of an A.P. is 33
   while their product is 792 . Find the A.P.

   (i) $4, 10, 16, \ldots$ (ii) $4, 11, 18, \ldots$ (iii) $5, 12, 19, \ldots$ (iv) $4, 9, 14, \ldots$ (v) $6, 13, 20, \ldots$

6. If the t_n of an A.P is $(6n+2)$, find S_n

   (i) $\frac{(5)(n^2+n)}{2} + 3n$ (ii) $\frac{(6)(n^2+n)}{2} + 3n$ (iii) $\frac{(6)(n^2+n)}{2} + 2n$ (iv) $\frac{(5)(n^2+n)}{2} + 6n$

   (v) $\frac{(4)(n^2+n)}{2} + 5n$

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

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

8. The sum of first three terms of an A.P. is $\frac{51}{20}$
   while their product is $\frac{561}{1000}$. Find the A.P.

   (i) $\frac{3}{5}, \frac{7}{20}, \frac{1}{10}, \ldots$ (ii) $\frac{3}{7}, \frac{19}{28}, \frac{13}{14}, \ldots$ (iii) $1, \frac{5}{4}, \frac{3}{2}, \ldots$ (iv) $\frac{3}{5}, \frac{11}{10}, \frac{8}{5}, \ldots$ (v) $\frac{3}{5}, \frac{17}{20}, \frac{11}{10}, \ldots$

9. Determine k so that $(3k+3), (k+4)$ and
   $(5k+1)$ are the consecutive terms of an A.P

   (i) 2 (ii) $\frac{2}{3}$ (iii) $\frac{2}{5}$ (iv) 0 (v) $\frac{4}{3}$

10. Which term of the G.P. $2, 2\sqrt{2}, 4 \ldots$ is 128 ?

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

11. The t_4 of a G.P. is $\frac{7}{250}$ and t_3 is $\frac{7}{50}$. Find t_5.

(i) $\frac{7}{1250}$ (ii) $\frac{7}{1248}$ (iii) $\frac{1}{250}$ (iv) $\frac{9}{1250}$ (v) $\frac{7}{1252}$

12. The t_{13} of an A.P. is $\frac{15}{4}$ and the t_{19} is $\frac{19}{4}$. Find t_8.

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

13. If S_{30} and S_{50} of an A.P. are 3630 and 10050 respectively, then $S_{80} =$

(i) 25682 (ii) 25680 (iii) 25678 (iv) 25681

14. How many terms of the A.P. $\frac{1}{7}, \frac{10}{21}, \frac{17}{21}, \ldots$ are needed to make the sum $\frac{1390}{21}$?

(i) 20 (ii) 21 (iii) 19 (iv) 18 (v) 23

15. If a, b, c are three consecutive terms of an A.P, then which of the following are true?

a) a^k, b^k, c^k are in G.P.

b) a^b, b^c, c^a are in G.P.

c) k^a, k^b, k^c are in G.P.

d) k^b, k^a, k^c are in G.P.

(i) {d,a,c} (ii) {b,c} (iii) {c} (iv) {a,c}

16. Which term of the A.P. $7, 8, 9, \ldots$ is 16 ?

(i) t_{11} (ii) t_{10} (iii) t_8 (iv) t_{12} (v) t_9

17. Insert 2 arithmetic means between $\frac{9}{7}$ and $\frac{39}{14}$.

(i) $\frac{39}{14}, \frac{30}{7}$ (ii) $\frac{43}{28}, \frac{25}{14}$ (iii) $\frac{16}{7}, \frac{23}{7}$ (iv) $\frac{25}{14}, \frac{16}{7}$ (v) $\frac{11}{14}, \frac{2}{7}$

18. The common ratio of the G.P. $\frac{9}{7}, \frac{3}{7}, \frac{1}{7}, \ldots =$

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

19. Find the common difference and next four terms of the following A.P. $\frac{9}{2}, \frac{47}{10}, \frac{49}{10}, \ldots =$

(i) $1\frac{1}{5}; \frac{21}{10}, \frac{13}{10}, \frac{1}{2}, (\frac{-3}{10})$ (ii) $1\frac{1}{5}; \frac{51}{10}, \frac{53}{10}, \frac{11}{2}, \frac{57}{10}$ (iii) $\frac{1}{5}; \frac{51}{10}, \frac{53}{10}, \frac{11}{2}, \frac{57}{10}$ (iv) $1\frac{1}{5}; \frac{81}{10}, \frac{93}{10}, \frac{21}{2}, \frac{117}{10}$

20. Which term of the G.P. $3, 12, 48, \ldots$ is 49152 ?

(i) t_{10} (ii) t_9 (iii) t_7 (iv) t_6 (v) t_8

21. The first term of the A.P. $2, 10, 18, 26, 34, \ldots =$

(i) 10 (ii) 18 (iii) 2 (iv) 34 (v) 26

22. Given $t_n = 64$, $n = 8$, $S_n = 288$, find d

(i) 7 (ii) 8 (iii) 9 (iv) 10 (v) 6

23. The first term of the G.P. $\frac{7}{4}, \frac{7}{8}, \frac{7}{16}, \frac{7}{32}, \frac{7}{64}, \ldots =$

(i) $\frac{7}{8}$ (ii) $\frac{7}{64}$ (iii) $\frac{7}{4}$ (iv) $\frac{7}{32}$ (v) $\frac{7}{16}$

24. The t_n of a G.P. =

(i) $\frac{(a)((r)^n - 1)}{(r-1)}$ (ii) $ra^{(n-1)}$ (iii) $ar^{(n-1)}$ (iv) $\frac{(r)((a)^n - 1)}{(a-1)}$

25. Given $t_n = 27$, $d = 6$, $n = 5$, find a

(i) 3 (ii) 4 (iii) 6 (iv) 2 (v) 0

Assignment Key

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