EduSahara™ Assignment

Name : Geometric Progression

Chapter : Progressions

Grade : SSC Grade X

1. The first term of the G.P. $5, 10, 20, 40, 80, \ldots =$

   (i) 40 (ii) 80 (iii) 5 (iv) 10 (v) 20

2. The first term of the G.P. $\frac{2}{7}, \frac{2}{49}, \frac{2}{343}, \frac{2}{2401}, \frac{2}{16807}, \ldots =$

   (i) $\frac{2}{7}$ (ii) $\frac{2}{49}$ (iii) $\frac{2}{343}$ (iv) $\frac{2}{2401}$ (v) $\frac{2}{16807}$

3. The common ratio of the G.P. $3, 15, 75, \ldots =$

   (i) 4 (ii) 6 (iii) 3 (iv) 5 (v) 8

4. The common ratio of the G.P. $\frac{1}{2}, \frac{1}{6}, \frac{1}{18}, \ldots =$

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

5. The t_8 of the G.P. $4, 8, 16, \ldots =$

   (i) 509 (ii) 511 (iii) 513 (iv) 512 (v) 515

6. The t_6 of the G.P. $\frac{3}{8}, \frac{3}{56}, \frac{3}{392}, \ldots =$

   (i) $\frac{1}{44818}$ (ii) $\frac{3}{134458}$ (iii) $\frac{1}{134456}$ (iv) $\frac{5}{134456}$ (v) $\frac{3}{134456}$

7. Determine t_3 of a G.P. whose t_4 is $\frac{1}{576}$ and common ratio is $\frac{1}{4}$.

   (i) $\frac{1}{144}$ (ii) $\frac{1}{146}$ (iii) $\frac{1}{48}$ (iv) $(\frac{-1}{144})$ (v) $\frac{1}{142}$

8. The t_8 of a G.P. is 4374 and t_4 is 54. Find t_3.

   (i) 19 (ii) 21 (iii) 15 (iv) 17 (v) 18

9. The t_3 of a G.P. is $\frac{1}{84}$ and t_8 is $\frac{1}{653184}$. Find t_7.

   (i) $\frac{1}{108866}$ (ii) $\frac{1}{108862}$ (iii) $(\frac{-1}{108864})$ (iv) $\frac{1}{36288}$ (v) $\frac{1}{108864}$

10. Which term of the G.P. $5, 15, 45, \ldots$ is 32805 ?

    (i) t_9 (ii) t_8 (iii) t_{12} (iv) t_{10} (v) t_7

11. Which term of the G.P. $\frac{1}{2}, \frac{1}{6}, \frac{1}{18}, \ldots$ is $\frac{1}{13122}$?

(i) t_6 (ii) t_{11} (iii) t_{10} (iv) t_8 (v) t_9

12. The sum of first three terms of a G.P. is 93 while their product is 3375 .
Find the G.P.

(i) $3,9,27,\ldots$ (ii) $3,12,48,\ldots$ (iii) $5,25,125,\ldots$ (iv) $3,15,75,\ldots$ (v) $4,20,100,\ldots$

13. The sum of first three terms of a G.P. is $\frac{342}{245}$ while their product is $\frac{216}{42875}$.

Find the G.P.

(i) $\frac{6}{5}, \frac{6}{35}, \frac{6}{245}, \ldots$ (ii) $\frac{6}{7}, \frac{6}{49}, \frac{6}{343}, \ldots$ (iii) $\frac{8}{5}, \frac{8}{35}, \frac{8}{245}, \ldots$ (iv) $\frac{6}{5}, (\frac{-6}{35}), \frac{6}{245}, \ldots$ (v) $\frac{6}{5}, \frac{6}{25}, \frac{6}{125}, \ldots$

14. Find the common ratio and next four terms of the following G.P.
$2, 0.6, 0.18$

(i) $0.4 ; 0.128, 0.0512, 0.02048, 0.008192$ (ii) $0.3 ; 0.054, 0.0162, 0.00486, 0.001458$

(iii) $0.4 ; 0.016, 0.0032, 0.00064, 0.000128$ (iv) $0.4 ; 0.054, 0.0162, 0.00486, 0.001458$

15. Find the common ratio and the next four terms of the
following G.P. $2, 2\sqrt{2}, 4 \ldots$

(i) $\sqrt{2} ; 4\sqrt{2} ; 8 ; 8\sqrt{2} ; 16$ (ii) $\sqrt{2} ; 14\sqrt{7} ; 98 ; 98\sqrt{7} ; 686$ (iii) $\sqrt{4} ; 4\sqrt{2} ; 8 ; 8\sqrt{2} ; 16$ (iv) $\sqrt{2} ; 16 ; 32 ; 64 ; 128$

(v) $\sqrt{4} ; 8 ; 8\sqrt{2} ; 16 ; 16\sqrt{2}$

16. Find the value ' x 'so that $\frac{5}{2}, x, \frac{2}{5}$, are three consecutive terms of a G.P.

(i) 1 (ii) 4 (iii) 2 (iv) 0 (v) -2

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

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

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

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

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

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

18. If the nth ,(n+3)rd and (n+6)th term of a G.P. are p, q and s respectively, then which of the following are true?

a) $q^2 = ps$

b) pqs = 1

c) $p^2 = qs$

d) $s^2 = pq$

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

19. Find the common ratio and next four terms of the following G.P. $\frac{1}{5}, \frac{1}{25}, \frac{1}{125} \ldots$

(i) $1\frac{1}{5}; \frac{216}{625}, \frac{1296}{3125}, \frac{7776}{15625}, \frac{46656}{78125}$ (ii) $\frac{1}{5}; \frac{1}{625}, \frac{1}{3125}, \frac{1}{15625}, \frac{1}{78125}$

(iii) $1\frac{1}{5}; \frac{1}{625}, \frac{1}{3125}, \frac{1}{15625}, \frac{1}{78125}$ (iv) $1\frac{1}{5}; (\frac{-64}{625}), \frac{256}{3125}, (\frac{-1024}{15625}), \frac{4096}{78125}$

20. Which term of the G.P. $2, 2\sqrt{2}, 4 \ldots$ is $64\sqrt{2}$?

(i) t_{12} (ii) t_{11} (iii) t_{13} (iv) t_{10} (v) t_{15}

21. The t_n of a G.P. =

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

22. Given a = 1 , r = 0.20 find t_3 and t_n of the G.P.

(i) $0.24; 0.80^{(n-1)}$ (ii) $0.14; 1.20^{(n-1)}$ (iii) $0.04; 0.20^{(n-1)}$ (iv) $-0.16; 0.20^{(n-1)}$

(v) $-0.06; 0.20^{(n-1)}$

23. The sum of first three terms of a G.P. is 39 and
the sum of next three terms is 1053 . Determine the G.P.

(i) $5, 7, 27, 81, 243, 729, \ldots$ (ii) $6, 6, 27, 81, 243, 729, \ldots$ (iii) $1, 11, 27, 81, 243, 729, \ldots$

(iv) $3, 9, 27, 81, 243, 729, \ldots$ (v) $0, 12, 27, 81, 243, 729, \ldots$

Assignment Key

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