

EduSahara™ Learning Center Assignment**Grade : Class X, SSC****Chapter : Progressions****Name : Geometric Progression**

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

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

2. The first term of the G.P. $\frac{1}{2}$, $\frac{1}{16}$, $\frac{1}{128}$, $\frac{1}{1024}$, $\frac{1}{8192}$, ... =(i) $\frac{1}{8192}$ (ii) $\frac{1}{2}$ (iii) $\frac{1}{1024}$ (iv) $\frac{1}{128}$ (v) $\frac{1}{16}$

3. The common ratio of the G.P. 5 , 10 , 20 , ... =

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

4. The common ratio of the G.P. $\frac{2}{5}$, $\frac{1}{10}$, $\frac{1}{40}$, ... =(i) $\frac{3}{4}$ (ii) $(-\frac{1}{4})$ (iii) $\frac{1}{2}$ (iv) $\frac{1}{6}$ (v) $\frac{1}{4}$ 5. The t_4 of the G.P. 2 , 6 , 18 , ... =

(i) 55 (ii) 53 (iii) 51 (iv) 54 (v) 56

6. The t_7 of the G.P. $\frac{5}{4}$, $\frac{5}{36}$, $\frac{5}{324}$, ... =(i) $\frac{5}{2125766}$ (ii) $\frac{7}{2125764}$ (iii) $\frac{5}{2125762}$ (iv) $\frac{5}{2125764}$ (v) $\frac{1}{708588}$ 7. Determine t_7 of a G.P. whose t_5 is $\frac{1}{4374}$ and common ratio is $\frac{1}{9}$.(i) $\frac{1}{118098}$ (ii) $\frac{1}{354294}$ (iii) $\frac{1}{354296}$ (iv) $(\frac{-1}{354294})$ (v) $\frac{1}{354292}$ 8. The t_6 of a G.P. is 729 and t_4 is 81 . Find t_8 .

(i) 6558 (ii) 6561 (iii) 6562 (iv) 6564 (v) 6560

9. The t_7 of a G.P. is $\frac{5}{186624}$ and t_5 is $\frac{5}{5184}$. Find t_3 .(i) $\frac{5}{146}$ (ii) $\frac{5}{142}$ (iii) $\frac{1}{48}$ (iv) $\frac{5}{144}$ (v) $\frac{7}{144}$

10. Which term of the G.P. 4 , 16 , 64 , ... is 65536 ?

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

11. Which term of the G.P. $\frac{6}{7}, \frac{2}{21}, \frac{2}{189}, \dots$ is $\frac{2}{1701}$?

- (i) t_3 (ii) t_4 (iii) t_2 (iv) t_5 (v) t_6
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12. The sum of first three terms of a G.P. is 52 while their product is 1728 .
Find the G.P.

- (i) 5, 15, 45, ... (ii) 4, 12, 36, ... (iii) 7, 21, 63, ...
(iv) 4, 8, 16, ... (v) 4, 0, 0, ...
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13. The sum of first three terms of a G.P. is $\frac{14}{5}$ while their product is $\frac{64}{125}$.
Find the G.P.

- (i) 2, 1, $\frac{1}{2}$, ... (ii) $\frac{8}{5}, (\frac{-4}{5}), \frac{2}{5}, \dots$ (iii) $\frac{8}{5}, \frac{4}{5}, \frac{2}{5}, \dots$
(iv) $\frac{8}{7}, \frac{4}{7}, \frac{2}{7}, \dots$ (v) $\frac{8}{5}, \frac{8}{5}, \frac{8}{5}, \dots$
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14. Find the common ratio and next four terms of the following G.P.
5, 0.5, 0.05

- (i) 0.2 ; 0.000, 0.0000, 0.00000, 0.000000
(ii) 0.1 ; 0.005, 0.0005, 0.00005, 0.000005
(iii) 0.2 ; 0.005, 0.0005, 0.00005, 0.000005
(iv) 0.2 ; 0.040, 0.0080, 0.00160, 0.000320
-

Find the common ratio and the next four terms of the

15. following G.P. $\sqrt{2}, 4, 8\sqrt{2}, \dots$

- (i) $\sqrt{8}$; $12\sqrt{3}$; $36\sqrt{2}$; $72\sqrt{3}$; $216\sqrt{2}$
(ii) $\sqrt{2}$; 32 ; $64\sqrt{2}$; 256 ; $512\sqrt{2}$
(iii) $\sqrt{8}$; 32 ; $64\sqrt{2}$; 256 ; $512\sqrt{2}$
(iv) $\sqrt{2}$; $64\sqrt{2}$; 256 ; $512\sqrt{2}$; 2048
(v) $\sqrt{8}$; $5\sqrt{10}$; $25\sqrt{2}$; $25\sqrt{10}$; $125\sqrt{2}$

16. Find the value 'x' so that $\frac{5}{4}$, x, $\frac{4}{5}$, are three consecutive terms of a G.P.

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

17. 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) k^a , k^b , k^c are in G.P.
 c) k^b , k^a , k^c are in G.P.
 d) a^b , b^c , c^a are in G.P.
 (i) {c,b} (ii) {b} (iii) {a,b} (iv) {d,a,b}

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) $p^2 = qs$
 b) $s^2 = pq$
 c) $q^2 = ps$
 d) $pqs = 1$
 (i) {c} (ii) {a,c} (iii) {b,c} (iv) {d,a,c}

19. Find the common ratio and next four terms of the following G.P. $\frac{2}{3}$, $\frac{2}{5}$, $\frac{6}{25}$...

- (i) $1\frac{3}{5}$; $\frac{18}{125}$, $\frac{54}{625}$, $\frac{162}{3125}$, $\frac{486}{15625}$
 (ii) $1\frac{3}{5}$; $(\frac{-16}{375})$, $\frac{32}{1875}$, $(\frac{-64}{9375})$, $\frac{128}{46875}$
 (iii) $1\frac{3}{5}$; $\frac{1024}{375}$, $\frac{8192}{1875}$, $\frac{65536}{9375}$, $\frac{524288}{46875}$
 (iv) $\frac{3}{5}$; $\frac{18}{125}$, $\frac{54}{625}$, $\frac{162}{3125}$, $\frac{486}{15625}$

20. Which term of the G.P. 2 , $2\sqrt{2}$, 4 ... is 8 ?

- (i) t_8 (ii) t_4 (iii) t_3 (iv) t_6 (v) t_5

21. The t_n of a G.P. =

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

$$(a - 1)$$

22. Given $a = 1$, $r = 0.60$ find t_4 and t_n of the G.P.

(i) $0.42 ; 0.40 (n - 1)$ (ii) $0.32 ; 1.60 (n - 1)$

(iii) $0.02 ; 0.60 (n - 1)$ (iv) $0.12 ; 0.60 (n - 1)$

(v) $0.22 ; 0.60 (n - 1)$

23. The sum of first three terms of a G.P. is 78 and the sum of next three terms is 2106. Determine the G.P.

(i) $9, 15, 54, 162, 486, 1458, \dots$

(ii) $8, 16, 54, 162, 486, 1458, \dots$

(iii) $3, 21, 54, 162, 486, 1458, \dots$

(iv) $4, 20, 54, 162, 486, 1458, \dots$

(v) $6, 18, 54, 162, 486, 1458, \dots$

Assignment Key

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