Cosmo School

Work Sheet – 03 (Mathematics) for class – Nine (24.09.2020) Chapter - Thirteen, Exercise - 13.2, Finite Series

Creative Multiplication Choice Questions

Answer to the questions No. (1 – 3) using the following information:

$\log 2 + \log 16 + \log 512 +$ ..... is a series.

1. **Which of the following series is obtainable from the given series?**

a) $1 + 2^2 + 3^2 +$.....

b) $1 + 4 + 6 +$.....

c) $1 + 4 + 5 +$.....

d) $1 + 4 + 7 +$.....

2. **What is the 12^{th} term of the series?**

a) $144 \log 2$ b) $121 \log 2$

c) 144 d) 121

3. **What is the sum of the first 12 terms of the series?**

a) $3900 \log 2$ b) $65 \log 2$

c) $650 \log 2$ d) $39 \log 2$

4. **What is the 9^{th} term of the series: $1^3 + 2^3 + 3^3 +$.....$+ 30^3$?**

a) 512 b) 729

c) 1000 d) 27000

5. **What is the value of $1^3 + 2^3 + 3^3 + 4^3 +$.....$+ 10^3$?**

a) 3015 b) 3020

c) 3025 d) 3045

6. **If $(1^3 + 2^3 + 3^3$ ..... $+ n^3)^a = (1 + 2 + 3 +$.....$+ n)$ then what is the value of a?**

a) 2 b) $\frac{1}{2}$

c) 3 d) $\frac{1}{3}$

7. **The 1^{st} term of geometric series is 2 and common ratio is $\frac{1}{2}$ then 4^{th} term of the series-**

a) $\frac{1}{16}$ b) $\frac{1}{4}$

c) 1 d) 4

Answer to the questions No. (8 - 10) using the following information:

The sum of the first n numbers of natural numbers is 15.

8. **What is the value of n?**

a) 5 b) 6

c) 7 d) 8

9. **What is the sum of the squares of the numbers?**

a) 55 b) 91

c) 100 d) 140

10. **What is the sum of the cubes of the numbers?**

a) 15 b) 55

c) 225 d) 625

Answer to the questions No. (11 - 14) using the following information:

The sum of the cubes of the first n natural numbers is 441.

11. **Which of the following is correct?**

a) $(1 + 2 + 3 + ... + n)^2 = 441$

b) $(1 + 2 + 3 + ... + n)^3 = 441$

c) $1^2 + 2^2 + 3^2 + \cdots + n^2 = 441$

d) $1 + 2 + 3 +$.....$+ n = 441$

12. **Which of the following is correct?**

a) $n^2 + n = 21$

b) $n^2 + n = 22$

c) $n^2 + n = 41$

d) $n^2 + n = 42$

13. **What is the value of n?**

a) 5 b) 6

c) 7 d) 8

14. **What is the sum of the squares of the numbers?**

a) 91 b) 182

c) 273 d) 546

15. **If the series: x + y + z + w +..... is a geometric series then which of the following relations is true?**

a) $\frac{y}{x} = \frac{w}{z}$

b) $y - x = w - z$

c) $\frac{x}{y} = \frac{w}{z}$

d) $x - y = z - w$

16. **In a geometric series if the first term is 5 and the common ratio is 7 then which of the following is that series?**

a) $5 + 2 +$……..
b) $7 + 35 +$……
c) $5 + 35 +$……
d) $7 + 2 +$……...

17. What is the common ratio of the series: $-a + 2ar + 4ar^2 +$……?
a) R b) 2r
c) 4r d) $2r^2$

18. In a geometric series if the 2nd term is $-2\sqrt{2}$ and the common ratio is $\sqrt{2}$ then what is the first term?
a) $2\sqrt{2}$ b) 2
c) $-\sqrt{2}$ d) -2

19. What is the next term of the geometric sequence: 2000, 1000, 500, ...?
a) 250 b) 125
c) -125 d) -250

20. What is the next term of the sequence: $2, -4, 8, -16$…….....?
a) -32 b) 16
c) 24 d) 32

21. If $2 + 4 + 8 + 16 +$……. is a geometric series then -
i. Common ratio is 2
ii. 5th term is 32
iii. 10th term is 1024
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

Answer to the questions No. (22 - 24) using the following information:
The following is a geometric series: 6 + 12 + x + ax +.....+ 768.

22. What is the common ratio of the series?
a) $\frac{1}{2}$ b) 2
c) 4 d) 8

23. What is the value of x?
a) 6 b) 12
c) 24 d) 48

24. What is the value of a?
a) 1 b) 2
c) 4 d) 8

Answer to questions no. (25 - 27) based on the following information:
$\log 3 + \log 9 + \log 27 + \log 81 + \cdots$

25. Which one of the following is the common difference of the series?
a) $\log 9$ b) $\log 3$
c) $2 \log 3$ d) $3 \log 3$

26. What is the 10th term of the series?
a) $\log 1000$ b) $\log 72000$
c) $\log 9000$ d) $\log 59049$

27. What is the sum of the first 15 terms of the series?
a) $15 \log 3$ b) $12 \log 3$
c) $120 \log 3$ d) $150 \log 3$

28. For a geometric series if the 2nd term is 1 and the 3rd term is 2 then what is the common ratio?
a) $\frac{1}{2}$ b) 1
c) 2 d) 4

29. For a geometric series if the 1st term is 1 and the common ratio is 2 then what is the value of the 3rd term?
a) $\frac{1}{4}$ b) $\frac{1}{2}$
c) 1 d) 4

30. For a geometric series if the 1st term is $\frac{\sqrt{3}}{2}$ and common ration is $\frac{\sqrt{2}}{\sqrt{3}}$ then which of the following is the 3rd term?
a) $\sqrt{3}$ b) $\sqrt{2}$
c) $\frac{1}{\sqrt{2}}$ d) $\frac{1}{\sqrt{3}}$

31. If the 1st term of a geometric series is 2 then -
i. General term is $2r^{n-1}$
ii. 5th term is $2r^5$
iii. 10th term is $2r^9$
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

The following is a geometric series: 4 + 12 + 36 +.....

32. What is the common ratio of the series?
a) 3 b) 2
c) $\frac{1}{2}$ d) $\frac{1}{3}$