

NAME: \_\_\_\_\_

1. Write a formula for the general term of the infinite sequence:

$$\frac{1}{5}, -\frac{1}{10}, \frac{1}{15}, -\frac{1}{20}, \dots$$

$$[A] \ t_n = \frac{(-2)^{n+1}}{5(n+1)} \quad [B] \ t_n = \frac{(-1)^{n+2}}{7n}$$

$$[C] \ t_n = \frac{(-1)^{n+2}}{5n} \quad [D] \ t_n = \frac{(-1)^{n+1}}{5n}$$

2. Write a formula for the general term of the infinite sequence:  $-\frac{1}{3}, \frac{1}{6}, -\frac{1}{9}, \frac{1}{12}, \dots$

$$[A] \ t_n = \frac{(-1)^n}{3n} \quad [B] \ t_n = \frac{(-2)^n}{3(n+1)}$$

$$[C] \ t_n = \frac{(-1)^{n+2}}{3n} \quad [D] \ t_n = \frac{(-1)^{n+2}}{n}$$

3. Write a formula for the general term of the infinite sequence:

$$\frac{1}{6}, -\frac{1}{12}, \frac{1}{18}, -\frac{1}{24}, \dots$$

$$[A] \ t_n = \frac{(-1)^{n+1}}{6n} \quad [B] \ t_n = \frac{(-1)^{n+2}}{4n}$$

$$[C] \ t_n = \frac{(-1)^{n+2}}{6n} \quad [D] \ t_n = \frac{(-2)^{n+1}}{6(n+1)}$$

4. Write a formula for the general term of the infinite sequence:  $-\frac{1}{4}, \frac{1}{8}, -\frac{1}{12}, \frac{1}{16}, \dots$

$$[A] \ t_n = \frac{(-1)^{n+2}}{4n} \quad [B] \ t_n = \frac{(-1)^n}{4n}$$

$$[C] \ t_n = \frac{(-2)^n}{4(n+1)} \quad [D] \ t_n = \frac{(-1)^{n+2}}{6n}$$

5. Consider the sequence

$$\frac{2}{1}, \frac{3}{8}, \frac{4}{27}, \frac{5}{64}, \frac{6}{125}, \dots$$

Assuming this pattern continues, determine what the  $n$ th term of the sequence is and use this to find the 6th term.

$$[A] \ \frac{5}{64} \quad [B] \ \frac{7}{216} \quad [C] \ \frac{4}{27} \quad [D] \ \frac{6}{125}$$

6. Consider the sequence  $\frac{2}{1}, \frac{3}{2}, \frac{4}{3}, \frac{5}{4}, \frac{6}{5}, \dots$

Assuming this pattern continues, determine what the  $n$ th term of the sequence is and use this to find the 12th term.

$$[A] \ \frac{10}{9} \quad [B] \ \frac{11}{10} \quad [C] \ \frac{12}{11} \quad [D] \ \frac{13}{12}$$

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7. Consider the sequence  $\frac{2}{1}, \frac{3}{4}, \frac{4}{9}, \frac{5}{16}, \frac{6}{25}, \dots$ . Assuming this pattern continues, determine what the  $n$ th term of the sequence is and use this to find the 9th term.
- [A]  $\frac{9}{64}$     [B]  $\frac{11}{100}$     [C]  $\frac{8}{49}$     [D]  $\frac{10}{81}$

8. Consider the sequence  $\frac{2}{1}, \frac{3}{8}, \frac{4}{27}, \frac{5}{64}, \frac{6}{125}, \dots$ . Assuming this pattern continues, determine what the  $n$ th term of the sequence is and use this to find the 7th term.
- [A]  $\frac{8}{343}$     [B]  $\frac{5}{64}$     [C]  $\frac{6}{125}$     [D]  $\frac{7}{216}$

9. Consider the sequence  $\frac{2}{1}, \frac{3}{4}, \frac{4}{9}, \frac{5}{16}, \frac{6}{25}, \dots$ . Assuming this pattern continues, find the 7th term.
- [A]  $\frac{8}{25}$     [B]  $\frac{7}{64}$     [C]  $\frac{7}{36}$     [D]  $\frac{8}{49}$

10. Consider the sequence  $\frac{2}{1}, \frac{3}{2}, \frac{4}{3}, \frac{5}{4}, \frac{6}{5}, \dots$ . Assuming this pattern continues, find the 9th term.
- [A]  $\frac{9}{6}$     [B]  $\frac{9}{8}$     [C]  $\frac{10}{7}$     [D]  $\frac{10}{9}$

11. Consider the sequence  $\frac{2}{1}, \frac{3}{8}, \frac{4}{27}, \frac{5}{64}, \frac{6}{125}, \dots$ . Assuming this pattern continues, find the 11th term.
- [A]  $\frac{11}{1000}$     [B]  $\frac{11}{512}$   
[C]  $\frac{12}{729}$     [D]  $\frac{12}{1331}$

12. Consider the sequence  $\frac{2}{1}, \frac{3}{8}, \frac{4}{27}, \frac{5}{64}, \frac{6}{125}, \dots$ . Assuming this pattern continues, find the 10th term.
- [A]  $\frac{10}{1331}$     [B]  $\frac{11}{512}$   
[C]  $\frac{11}{1000}$     [D]  $\frac{10}{729}$

- [1]  D
- [2]  A
- [3]  A
- [4]  B
- [5]  B
- [6]  D
- [7]  D
- [8]  A
- [9]  D
- [10]  D
- [11]  D
- [12]  C