

Find an explicit rule for the nth term of the arithmetic sequence.

22)  $a_{17} = -97, a_{19} = -283$

$$a_n = 1391 - 93(n-1)$$

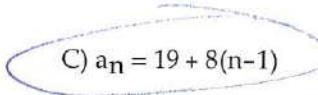
23) 19, 27, 35, 43, ...

A)  $a_n = 19 - 8(n-1)$

B)  $a_n = 19 - 8(n)$

C)  $a_n = 19 + 8(n-1)$

D)  $a_n = 19 + 8(n)$



Find the sum of the partial geometric series.

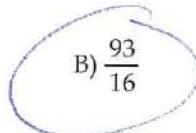
24)  $3 + \frac{3}{2} + \frac{3}{4} + \frac{3}{8} + \frac{3}{16}$

A) 93

B)  $\frac{93}{16}$

C)  $\frac{3}{4}$

D)  $\frac{3}{16}$



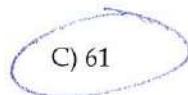
25)  $1 + -3 + 9 + -27 + 81$

A) -61

B) -121

C) 61

D) 121



26) Write the first 5 terms of the sequence. Assume n=1

$$a_n = \frac{5n}{(2n-1)!}$$

$$\frac{5}{1}, \frac{10}{6}, \frac{15}{120}, \frac{20}{5040}, \frac{25}{362880}$$

Expand

27.  $(2x + 1)^4$

7)  $5 - 25 + 125 - 625 + \dots$

A)  $\sum_{n=0}^{\infty} 5 \cdot 5^{n+1}$

B)  $\sum_{n=0}^{\infty} 5(-5)^n$

C)  $\sum_{n=0}^{\infty} 5 \cdot 5^n$

D)  $\sum_{n=0}^{\infty} 5(-5)^{n+1}$

8) Use sigma notation to write the sum

$$1 - \frac{1}{2} + \frac{1}{4} - \frac{1}{8} + \frac{1}{16} - \dots = \sum_{n=1}^{\infty} (-\frac{1}{2})^{n-1}$$

Determine whether the infinite geometric series converges. If the series converges, determine the sum.

9)  $3 + 6 + 12 + 24 + \dots$

A) Diverges

B) Converges; 93

C) Converges; 21

D) Converges; 45

10)  $60 - 12 + \frac{12}{5} - \frac{12}{25} + \dots$

A) Converges; 75

B) Diverges

C) Converges; 6240

D) Converges; 50

Express the rational number as a fraction of integers. Show all your work.

11)  $0.\overline{6} = \frac{6}{10} + \frac{6}{100} + \frac{6}{1000} + \dots$

$$S = \frac{\frac{6}{10}}{1 - \frac{1}{10}} = \frac{\frac{6}{10}}{\frac{9}{10}} = \frac{6}{9} = \frac{2}{3}$$

Find an explicit rule for the nth term of the geometric sequence.

12) The second and fifth terms of a geometric sequence are -36 and 2304, respectively.

$$a_n = 9(-4)^{n-1}$$

13) -1, -3, -9, -27, ...

A)  $a_n = 3 \cdot -1^{n+1}$

B)  $a_n = 3 \cdot -1^n$

C)  $a_n = -1 \cdot 3^n$

D)  $a_n = -1 \cdot 3^{n-1}$