Sigma Notation & Infinite Geometric Series · 1

Evaluate the sum of $k^2 + 1$ for $k = 1$ to 4.

$$\sum_{k=1}^{4} (k^2 + 1)$$

Sigma Notation & Infinite Geometric Series · 2

Does the infinite geometric series $18 + 6 + 2 + \ldots$ converge or diverge?

Sigma Notation & Infinite Geometric Series · 3

Find the sum of the infinite geometric series $4 \cdot (-\frac{2}{3})^{k-1}$ for $k = 1$ to ∞.

$$\sum_{k=1}^{\infty} 4 \cdot (-\frac{2}{3})_{k-1}$$

Sigma Notation & Infinite Geometric Series · 4

Evaluate the sum of $-k + 3$ for $k = 3$ to 7.

$$\sum_{k=3}^{7} (-k + 3)$$

Sigma Notation & Infinite Geometric Series · 5

Write the repeating decimal 0.222... as a fraction. (It is the infinite geometric series $\frac{2}{10} + \frac{2}{100} + \frac{2}{1000} + \ldots$)

Sigma Notation & Infinite Geometric Series · 6

What is the common ratio of the geometric series $27 + 9 + 3 + \ldots$?

Sigma Notation & Infinite Geometric Series · 7

Evaluate the sum of $2 \cdot 2^k$ for $k = 0$ to 3.

$$\sum_{k=0}^{3} 2 \cdot 2^k$$

Sigma Notation & Infinite Geometric Series · 8

Evaluate the sum of $k^2 + 2k + 4$ for $k = 1$ to 3.

$$\sum_{k=1}^{3} (k^2 + 2k + 4)$$

Sigma Notation & Infinite Geometric Series · 2

ANSWER

converges

Sigma Notation & Infinite Geometric Series · 1

ANSWER

34

Sigma Notation & Infinite Geometric Series · 4

ANSWER

-10

Sigma Notation & Infinite Geometric Series · 3

ANSWER

$$\frac{12}{5}$$

Sigma Notation & Infinite Geometric Series · 6

ANSWER

$$\frac{1}{3}$$

Sigma Notation & Infinite Geometric Series · 5

ANSWER

$$\frac{2}{9}$$

Sigma Notation & Infinite Geometric Series · 8

ANSWER

38

Sigma Notation & Infinite Geometric Series · 7

ANSWER

30

Sigma Notation & Infinite Geometric Series · 9

Find the sum of the infinite geometric series $3 \cdot (-\frac{2}{3})^{k-1}$ for k = 1 to ∞.

$$\sum_{k=1}^{\infty} 3 \cdot (-\frac{2}{3})_{k-1}$$

Sigma Notation & Infinite Geometric Series · 10

Evaluate the sum of $3 \cdot 2^k$ for k = 0 to 4.

$$\sum_{k=0}^{4} 3 \cdot 2^k$$

Sigma Notation & Infinite Geometric Series · 11

Find the sum of the infinite geometric series 36 + 48 + 64 + …, or write diverges if it has no sum.

Sigma Notation & Infinite Geometric Series · 12

Write the repeating decimal 0.3535... as a fraction. (It is the infinite geometric series $\frac{35}{100} + \frac{35}{10000} + \ldots$)

Sigma Notation & Infinite Geometric Series · 13

Evaluate the sum of $k^2 + k - 2$ for k = 0 to 4.

$$\sum_{k=0}^{4} (k^2 + k - 2)$$

Sigma Notation & Infinite Geometric Series · 14

An infinite geometric series has sum 4 and common ratio $\frac{1}{4}$. Find its first term.

Sigma Notation & Infinite Geometric Series · 15

Evaluate the sum of $(-1)^k \cdot (4k + 1)$ for k = 1 to 4.

$$\sum_{k=1}^{4} (-1)^k \cdot (4k + 1)$$

Sigma Notation & Infinite Geometric Series · 16

Find the sum of the infinite geometric series $7 \cdot (-\frac{1}{3})^{k-1}$ for k = 1 to ∞.

$$\sum_{k=1}^{\infty} 7 \cdot (-\frac{1}{3})_{k-1}$$

Sigma Notation & Infinite Geometric Series · 10

ANSWER

93

Sigma Notation & Infinite Geometric Series · 9

ANSWER

$\frac{9}{5}$

Sigma Notation & Infinite Geometric Series · 12

ANSWER

$\frac{35}{99}$

Sigma Notation & Infinite Geometric Series · 11

ANSWER

diverges

Sigma Notation & Infinite Geometric Series · 14

ANSWER

3

Sigma Notation & Infinite Geometric Series · 13

ANSWER

30

Sigma Notation & Infinite Geometric Series · 16

ANSWER

$\frac{21}{4}$

Sigma Notation & Infinite Geometric Series · 15

ANSWER

8

Find the sum of the infinite geometric series $6 \cdot (\frac{1}{2})^{k-1}$ for $k = 1$ to ∞.

$$\sum_{k=1}^{\infty} 6 \cdot (\frac{1}{2})_{k-1}$$

Evaluate the sum of $5 \cdot (-2)^k$ for $k = 0$ to 3.

$$\sum_{k=0}^{3} 5 \cdot (-2)^k$$

Find the sum of the infinite geometric series $2 + 4 + 8 + \ldots$, or write diverges if it has no sum.

Write the repeating decimal 0.666... as a fraction. (It is the infinite geometric series $\frac{6}{10} + \frac{6}{100} + \frac{6}{1000} + \ldots$)

Evaluate the sum of $k^2 - 2$ for $k = 1$ to 6.

$$\sum_{k=1}^{6} (k^2 - 2)$$

An infinite geometric series has sum 6 and common ratio $\frac{2}{3}$. Find its first term.

Evaluate the sum of $(-1)^k \cdot (k + 3)$ for $k = 1$ to 5.

$$\sum_{k=1}^{5} (-1)^k \cdot (k + 3)$$

Find the sum of the infinite geometric series $6 \cdot (-\frac{2}{3})^{k-1}$ for $k = 1$ to ∞.

$$\sum_{k=1}^{\infty} 6 \cdot (-\frac{2}{3})_{k-1}$$

Sigma Notation & Infinite Geometric Series · 18

ANSWER

-25

Sigma Notation & Infinite Geometric Series · 17

ANSWER

12

Sigma Notation & Infinite Geometric Series · 20

ANSWER

$$\frac{2}{3}$$

Sigma Notation & Infinite Geometric Series · 19

ANSWER

diverges

Sigma Notation & Infinite Geometric Series · 22

ANSWER

2

Sigma Notation & Infinite Geometric Series · 21

ANSWER

79

Sigma Notation & Infinite Geometric Series · 24

ANSWER

$$\frac{18}{5}$$

Sigma Notation & Infinite Geometric Series · 23

ANSWER

-6