Task card 1 Sigma Notation & Infinite Geometri...

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

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

Task card 2 Sigma Notation & Infinite Geometri...

Does the infinite geometric series 18 + 6 + 2 + ... converge or diverge?

Task card 3 Sigma Notation & Infinite Geometri...

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

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

Task card 4 Sigma Notation & Infinite Geometri...

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

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

Task card 5 Sigma Notation & Infinite Geometri...

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

Task card 6 Sigma Notation & Infinite Geometri...

What is the common ratio of the geometric series 27 + 9 + 3 + ...?

Task card 7 Sigma Notation & Infinite Geometri...

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

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

Task card 8 Sigma Notation & Infinite Geometri...

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

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

Task card 9 Sigma Notation & Infinite Geometri...

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

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

Task card 10 Sigma Notation & Infinite Geometri...

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

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

Task card 11 Sigma Notation & Infinite Geometri...

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

Task card 12 Sigma Notation & Infinite Geometri...

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

Task card 13 Sigma Notation & Infinite Geometri...

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

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

Task card 14 Sigma Notation & Infinite Geometri...

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

Task card 15 Sigma Notation & Infinite Geometri...

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

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

Task card 16 Sigma Notation & Infinite Geometri...

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

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

Task card 17 Sigma Notation & Infinite Geometri...

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

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

Task card 18 Sigma Notation & Infinite Geometri...

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

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

Task card 19 Sigma Notation & Infinite Geometri...

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

Task card 20 Sigma Notation & Infinite Geometri...

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

Task card 21 Sigma Notation & Infinite Geometri...

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

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

Task card 22 Sigma Notation & Infinite Geometri...

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

Task card 23 Sigma Notation & Infinite Geometri...

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

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

Task card 24 Sigma Notation & Infinite Geometri...

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 Task Cards

Recording sheet · Grade 12 · Answer each question. Write fractions in simplest form. For converge-or-diverge questions write converges or diverges.

Scan to check your answers

Name: _____ Date: _____

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

Sigma Notation & Infinite Geometric Series Task Cards: Answer Key

Grade 12 · Medium

The answers online

1. 34	**2.** converges	**3.** $\frac{12}{5}$
4. -10	**5.** $\frac{2}{9}$	**6.** $\frac{1}{3}$
7. 30	**8.** 38	**9.** $\frac{9}{5}$
10. 93	**11.** diverges	**12.** $\frac{35}{99}$
13. 30	**14.** 3	**15.** 8
16. $\frac{21}{4}$	**17.** 12	**18.** -25
19. diverges	**20.** $\frac{2}{3}$	**21.** 79
22. 2	**23.** -6	**24.** $\frac{18}{5}$