Task card 1 Sigma Notation & Infinite Geometri...

Find the sum of the infinite geometric series $64 - 16 + 4 - \ldots$, or write diverges if it has no sum.

Task card 2 Sigma Notation & Infinite Geometri...

Find the sum of the infinite geometric series $10 \cdot (\frac{3}{5})^{k-1}$ for $k = 1$ to ∞.

$$\sum_{k=1}^{\infty} 10 \cdot (\frac{3}{5})_{k-1}$$

Task card 3 Sigma Notation & Infinite Geometri...

Evaluate the sum of $(-1)^k \cdot (2k + 1)$ for $k = 1$ to 8.

$$\sum_{k=1}^{8} (-1)^k \cdot (2k + 1)$$

Task card 4 Sigma Notation & Infinite Geometri...

An infinite geometric series has sum 10 and common ratio $\frac{1}{2}$. Find its first term.

Task card 5 Sigma Notation & Infinite Geometri...

Write the repeating decimal $0.555\ldots$ as a fraction. (It is the infinite geometric series $\frac{5}{10} + \frac{5}{100} + \frac{5}{1000} + \ldots$)

Task card 6 Sigma Notation & Infinite Geometri...

A ball is dropped from a height of 20 m. After each bounce it rises to $\frac{1}{3}$ of its previous height. Find the total distance, in meters, the ball travels up and down before it comes to rest.

Task card 7 Sigma Notation & Infinite Geometri...

Evaluate the sum of $(\frac{1}{2})^k$ for k = 0 to 4.

$$\sum_{k=0}^{4} (\frac{1}{2})_k$$

Task card 8 Sigma Notation & Infinite Geometri...

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

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

Task card 9 Sigma Notation & Infinite Geometri...

Find the sum of the infinite geometric series 100 + 60 + 36 + …, or write diverges if it has no sum.

Task card 10 Sigma Notation & Infinite Geometri...

Find the sum of the infinite geometric series $7 \cdot (-\frac{1}{2})^{k-1}$ for k = 1 to ∞.

$$\sum_{k=1}^{\infty} 7 \cdot (-\frac{1}{2})_{k-1}$$

Task card 11 Sigma Notation & Infinite Geometri...

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

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

Task card 12 Sigma Notation & Infinite Geometri...

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

Task card 13 Sigma Notation & Infinite Geometri...

A ball is dropped from a height of 7 m. After each bounce it rises to $\frac{3}{4}$ of its previous height. Find the total distance, in meters, the ball travels up and down before it comes to rest.

Task card 14 Sigma Notation & Infinite Geometri...

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

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

Task card 15 Sigma Notation & Infinite Geometri...

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

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

Task card 16 Sigma Notation & Infinite Geometri...

Find the sum of the infinite geometric series 18 + 6 + 2 + ..., or write diverges if it has no sum.

Task card 17 Sigma Notation & Infinite Geometri...

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

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

Task card 18 Sigma Notation & Infinite Geometri...

Evaluate the sum of $(-1)^k \cdot (4k + 2)$ for k = 1 to 4.

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

Task card 19 Sigma Notation & Infinite Geometri...

An infinite geometric series has sum 12 and common ratio $-\frac{1}{3}$. Find its first term.

Task card 20 Sigma Notation & Infinite Geometri...

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

Task card 21 Sigma Notation & Infinite Geometri...

A ball is dropped from a height of 4 m. After each bounce it rises to $\frac{3}{4}$ of its previous height. Find the total distance, in meters, the ball travels up and down before it comes to rest.

Task card 22 Sigma Notation & Infinite Geometri...

Evaluate the sum of $3 \cdot (\frac{1}{2})^k$ for k = 0 to 4.

$$\sum_{k=0}^{4} 3 \cdot (\frac{1}{2})_k$$

Task card 23 Sigma Notation & Infinite Geometri...

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

$$\sum_{k=0}^{4} (k^2 + 3k + 2)$$

Task card 24 Sigma Notation & Infinite Geometri...

Find the sum of the infinite geometric series 36 - 24 + 16 - …, or write diverges if it has no sum.

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 · Hard

The answers online

1. $\frac{256}{5}$	**2.** 25	**3.** 8
4. 5	**5.** $\frac{5}{9}$	**6.** 40
7. $\frac{31}{16}$	**8.** 30	**9.** 250
10. $\frac{14}{3}$	**11.** -4	**12.** 5
13. 49	**14.** -63	**15.** 38
16. 27	**17.** $\frac{12}{5}$	**18.** 8
19. 16	**20.** $\frac{2}{9}$	**21.** 28
22. $\frac{93}{16}$	**23.** 70	**24.** $\frac{108}{5}$