

Infinite geometric sum

Date _____ Period _____

Evaluate the related series of each sequence.

1) 3, -12, 48, -192, 768

A) 635 B) 598

C) 615 D) $\frac{3}{5}$

2) 2, 10, 50, 250

A) 295 B) 312

C) 346 D) $-\frac{1}{2}$

Evaluate each geometric series described.

3) $\sum_{m=1}^9 0.5 \cdot (-2)^{m-1}$

A) 116.4 B) 85.5
C) 97.6 D) 0.1666666666667

4) $\sum_{m=1}^9 20 \cdot \left(-\frac{1}{2}\right)^{m-1}$

A) $\frac{855}{64}$ B) $\frac{171}{13}$
C) $\frac{173}{13}$ D) $\frac{40}{3}$

Determine if each geometric series converges or diverges.

5) $1 - \frac{5}{2} + \frac{25}{4} - \frac{125}{8} \dots$

A) Converges B) Diverges

6) $5 + 1 + \frac{1}{5} + \frac{1}{25} \dots$

A) Converges B) Diverges

$$7) 3 + \frac{15}{4} + \frac{75}{16} + \frac{375}{64} \dots$$

- A) Diverges B) Converges

$$8) 7.7 + 4.62 + 2.772 + 1.6632 \dots$$

- A) Diverges B) Converges

Evaluate each infinite geometric series described.

$$9) \sum_{m=1}^{\infty} -4 \cdot \left(-\frac{1}{5}\right)^{m-1}$$

- A) No sum B) $\frac{5}{6}$
 C) -3 D) $-\frac{10}{3}$

$$10) \sum_{m=1}^{\infty} -6 \cdot \left(\frac{2}{3}\right)^{m-1}$$

- A) 3 B) -22
 C) -20 D) -18

$$11) \sum_{k=1}^{\infty} -40 \cdot \left(-\frac{1}{2}\right)^{k-1}$$

- A) $\frac{2}{3}$ B) $-\frac{79}{3}$
 C) No sum D) $-\frac{80}{3}$

$$12) \sum_{k=1}^{\infty} \frac{3}{4} \cdot \left(\frac{1}{5}\right)^{k-1}$$

- A) No sum B) $\frac{15}{16}$
 C) $\frac{17}{16}$ D) $\frac{5}{4}$

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