

1. (1 pt) Given:

$$A_n = \frac{8n}{4n+13}$$

For both of the following answer blanks, decide whether the given sequence or series is convergent or divergent. If convergent, enter the limit (for a sequence) or the sum (for a series). If divergent, enter INF if it diverges to infinity, MINF if it diverges to minus infinity, or DIV otherwise.

(a) The series $\sum_{n=1}^{\infty} (A_n)$. _____

(b) The sequence $\{A_n\}$. _____

2. (1 pt) Given:

$$A_n = \frac{70}{7^n}$$

Determine:

(a) whether $\sum_{n=1}^{\infty} (A_n)$ is convergent. _____

(b) whether $\{A_n\}$ is convergent. _____

If convergent, enter the limit of convergence. If not, enter "DIV" (unquoted).

3. (1 pt) Determine the sum of the following series.

$$\sum_{n=1}^{\infty} \frac{(-2)^{n-1}}{6^n}$$

4. (1 pt) The following series are geometric series.

Determine whether each series converges or not.

For the series which converge, enter the sum of the series. For the series which diverges enter "DIV" (without quotes).

(a) $\sum_{n=1}^{\infty} \frac{9^n}{8^n} =$ _____,

(b) $\sum_{n=2}^{\infty} \frac{1}{3^n} =$ _____,

(c) $\sum_{n=0}^{\infty} \frac{3^n}{8^{2n+1}} =$ _____,

(d) $\sum_{n=5}^{\infty} \frac{8^n}{9^n} =$ _____,

(e) $\sum_{n=1}^{\infty} \frac{9^n}{9^{n+4}} =$ _____,

(f) $\sum_{n=1}^{\infty} \frac{8^n + 3^n}{9^n} =$ _____.

5. (1 pt) Determine whether the series is convergent or divergent. If convergent, find the sum; if divergent, enter *div* .

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

Answer: _____

6. (1 pt) Find the values of x for which the series below converges.

$$\sum_{n=1}^{\infty} x^n 8^n$$

Answer: $|x| <$ _____