

Determinare $\sup$, $\inf$, e, se esistono, $\max$ e $\min$ dei seguenti insiemi

- 1) $A = \{x \in \mathbb{R} \mid x = 1 - 2^{-n}, n \in \mathbb{N}\}$
 $[\inf(A) = \min(A) = 1/2, \quad \sup(A) = 1]$
- 2) $A = \{x \in \mathbb{R} \mid x = \frac{3-2n}{n+2}, n \in \mathbb{N}\}$
 $[\inf(A) = -2, \quad \sup(A) = \max(A) = 1/2]$
- 3) $A = \{x \in \mathbb{R} \mid x = \frac{n+3}{2n+2}, n \in \mathbb{N}\}$
 $[\inf(A) = 1/2, \quad \sup(A) = \max(A) = 1]$
- 4) $A = \{x \in \mathbb{R} \mid x = \frac{n+4}{2n^2+1}, n \in \mathbb{N}\}$
 $[\inf(A) = 0, \quad \sup(A) = \max(A) = 5/3]$
- 5) $A = \left\{x \in \mathbb{R} \mid x = \frac{1-n^2}{n+2}, n \in \mathbb{N}\right\}$
 $[\inf(A) = -\infty, \quad \sup(A) = \max(A) = 0]$
- 6) $A = \left\{x \in \mathbb{R} \mid x = \frac{|3-2n|}{n+2}, n \in \mathbb{N}\right\}$
 $[\inf(A) = \min(A) = 1/4, \quad \sup(A) = 2]$
- 7) $A = \{x \in \mathbb{R} \mid x = 3 - (-1)^n + \frac{2}{n}, n \in \mathbb{N}\}$
 $[\inf(A) = 2, \quad \sup(A) = \max(A) = 6]$
- 8) $A = \{x \in \mathbb{R} \mid x = \log(n), n \in \mathbb{N}\}$
 $[\inf(A) = \min(A) = 0, \quad \sup(A) = +\infty]$
- 9) $A = \{x \in \mathbb{R} \mid x = 2^{-n}, n \in \mathbb{N}\}$
 $[\inf(A) = 0, \quad \sup(A) = \max(A) = 1/2]$
- 10) $A = \left\{x \in \mathbb{R} \mid x = \frac{\sqrt{n}}{n+1}, n \in \mathbb{N}\right\}$
 $[\inf(A) = 0, \quad \sup(A) = \max(A) = 1/2]$