

2. [4 points] Let $a_n = \sum_{k=1}^n \frac{1}{k}$. Circle all of the statements given below that are true about the sequence a_n and *briefly* explain your answers.

- successive values of the sequence a_n increase in magnitude
- successive values of the sequence a_n decrease in magnitude
- successive values of the sequence a_n may increase or decrease in magnitude
- the sequence a_n converges
- the sequence a_n diverges
- it is not possible to determine whether sequence a_n converges or diverges