Subsequence:- let $\langle x_n \rangle$ be a sequence of real numbers and let $\langle i_n \rangle$ be a strictly increasing sequence of natural numbers i.e. $i_1 < i_2 < i_3 < \ldots$ then the sequence $\langle x_{i_n} \rangle = \langle x_{i_1}, x_{i_2}, x_{i_3}, \ldots \rangle$ is called a subsequence of $\langle x_n \rangle$.

Eg → ☆ $\langle x_{2n} \rangle = \langle x_2, x_4, x_6, \ldots \rangle$ and
$\langle x_{2n-1} \rangle = \langle x_1, x_3, x_5, \ldots \rangle$ are subsequences of $\langle x_n \rangle = \langle x_1, x_2, x_3, x_4, \ldots \rangle$

☆ $\left\langle \frac{1}{n} \right\rangle = \left\langle 1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \ldots \right\rangle$

$\left\langle \frac{1}{n+2} \right\rangle = \left\langle \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \ldots \right\rangle$

$\left\langle \frac{1}{2n-1} \right\rangle = \left\langle 1, \frac{1}{3}, \frac{1}{5}, \ldots \right\rangle$

$\left\langle \frac{1}{n^2} \right\rangle = \left\langle 1, \frac{1}{4}, \frac{1}{9}, \ldots \right\rangle$

$\Rightarrow \left\langle \frac{1}{n+2} \right\rangle, \left\langle \frac{1}{2n-1} \right\rangle, \left\langle \frac{1}{n^2} \right\rangle$ are subsequences of $\left\langle \frac{1}{n} \right\rangle$

\# $\left\langle \frac{1}{2}, 1, \frac{1}{4}, \frac{1}{3}, \frac{1}{6}, \frac{1}{5}, \ldots \right\rangle$ and
$\left\langle 1, 0, \frac{1}{3}, 0, \frac{1}{5}, \ldots \right\rangle$ are not subsequences of $\left\langle \frac{1}{n} \right\rangle$