Indian Institute of Technology Hyderabad
Future Wireless Communitcation
Entrace Exam

Duration: 30 min Date: Jun 23, 2023

1. A circle is inscribed in a rhombus. Find the radius of the circle if the diagonals of the rhombus are of length 16 and 30.
2. Let $\{a_n\}$ be a non-constant arithmetic progression. $a_1 = 1$ and the following holds true: for any $n \geq 1$, the value of $\dfrac{a_{2n} + a_{2n-1} + \cdots + a_{n+1}}{a_n + a_{n-1} + \cdots + a_1}$ remains constant (does not depend on n). Find a_7.

Best wishes