

1-9	10	11	12	13	14	15	16	xxx	xxx	xxx	xxx	xxx	xxx	TOT

University of Gaziantep, Department of

Student Name, Surname :

Student Id No :

Duration 100 min.

Date/Time

1. Write a C++ program to implement algorithm given below:

S1: Start

S2: Input an integer n

S3: Compute T defined by:

$$T = \frac{n}{\sqrt{1} + \sqrt{2} + \sqrt{3} + \dots + \sqrt{n}}$$

S4: Output T

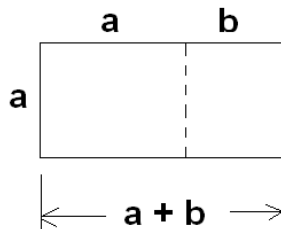
S5: End

Write down the output of the algorithm for $n = 5$:

2. In geometry, a golden rectangle is a rectangle whose side lengths are in the golden ratio:

$$\frac{a+b}{a} = \frac{a}{b} = \varphi$$

where φ is a constant and known as the golden number.



(a) Determine the numerical value of φ analytically.

(b) Consider any golden rectangle.

Write a C++ program to perform the followings:

- Read the value of a
- Calculate the value of b (from $b = a / \varphi$)
- Output the area of the golden rectangle

3. Write a C++ program to input two integers M and N from keyboard and output sum of the positive even numbers between M and N .