

APPROXIMATION OF π USING REGULAR POLYGON

PARK, JONGSOO¹ AND PARK, JONGHYUN²

¹ 216 banjuk-dong, kongju-si, chungnam-do, 314-100, korea

² Meida Engineering Master,

Control Room Video Director MBC, Plus 34-1 Yeouido-dong,
Yeongdeungpo-gu, Seoul, 150-919, Korea

Abstract

One of three great problems of classical geometry which has been known to be the oldest and is the latest to be proven to be impossible to construct with compass and straightedge is Squaring the Circle or the possibility of its reverse. This problem concluded by a famous German mathematician, Ferdinand Lindemann (1852-1939), that π turned out to be the transcendental number. This paper focuses on the approximate methods proposed by several Greek mathematicians, Antiphon (480 BC - 411 BC), Bryson (450 BC - 390 BC), and Archimedes (Archimedes; 287 BC - 212 BC). They believed the value of π lies between inscribed and circumscribed regular polygons. It is widely known how to construct inscribed hexagon bisecting angles only with compass and straightedge but it is not known to this date how to construct a hexagon circumscribing a circle by bisecting. This paper attempts to the latter and will show its possibility of construction.