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99.99% Approximation to Angle Trisection

By Mahesh Bubna

Abstract- Angle trisection, which involves dividing an angle into three equal parts, is a classic problem in geometry. However, it's important to note that it's impossible to exactly trisect an arbitrary angle using only a compass and straightedge, as proven by the ancient Greek mathematicians.

The classical geometric construction methods allow for the creation of angles that are multiples of a fixed angle using only a compass and straightedge. The only angles that can be trisected exactly are those that can be constructed by repeatedly bisecting angles, such as angles of 60 degrees (since 60 = 2^2 * 3 * 5).

The problem of angle trisection is closely related to the problem of "angle duplication," which involves constructing an angle that is twice a given angle. This problem is similarly unsolvable with only a compass and straightedge for arbitrary angles.

Keywords: angle trisection approximation, geometric constructions, numerical methods for angle trisection, high-precision angle division, trigonometric approximation of angle trisection, computational geometry for angle trisection.

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The problem of angle trisection is closely related to the problem of "angle duplication," which involves constructing an angle that is twice a given angle. This problem is similarly unsolvable with only a compass and straightedge for arbitrary angles.

If you're interested in an approximation of angle trisection, one approach involves using numerical methods to approximate the trisected angle. However, this wouldn't involve a pure geometric construction and would likely require the use of calculators or computers to perform the calculations.

Keywords: angle trisection approximation, geometric constructions, numerical methods for angle trisection, high-precision angle division, trigonometric approximation of angle trisection, computational geometry for angle trisection.

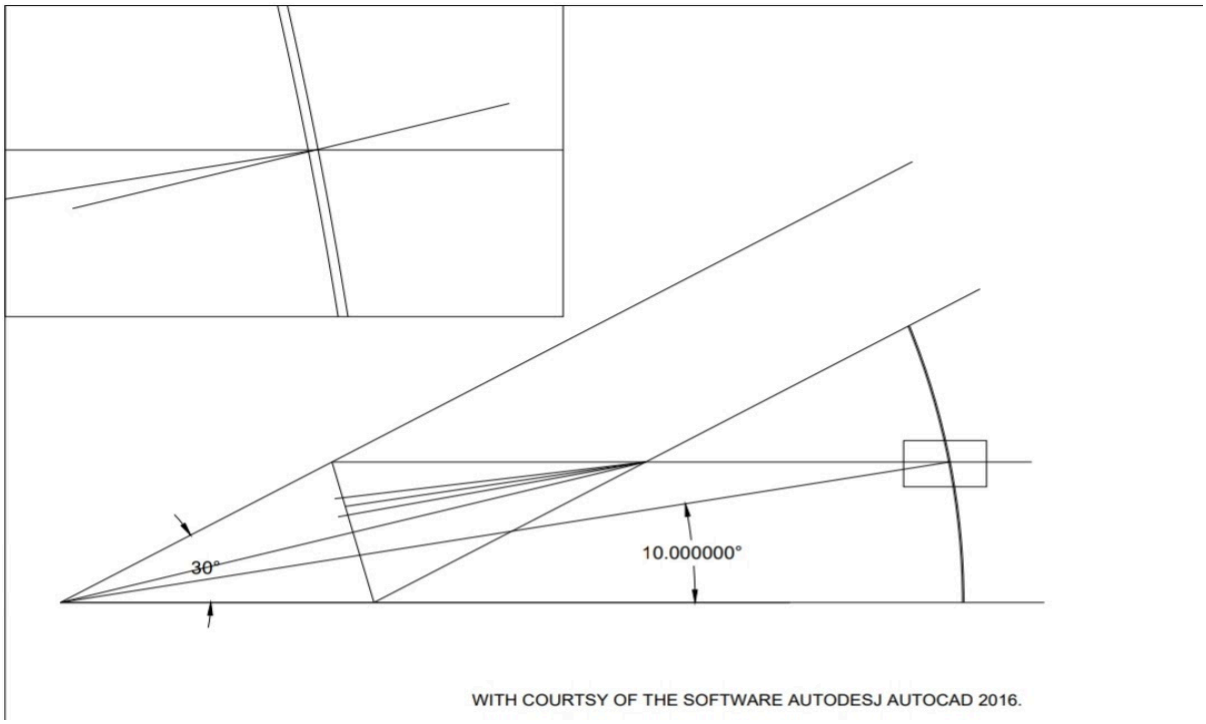
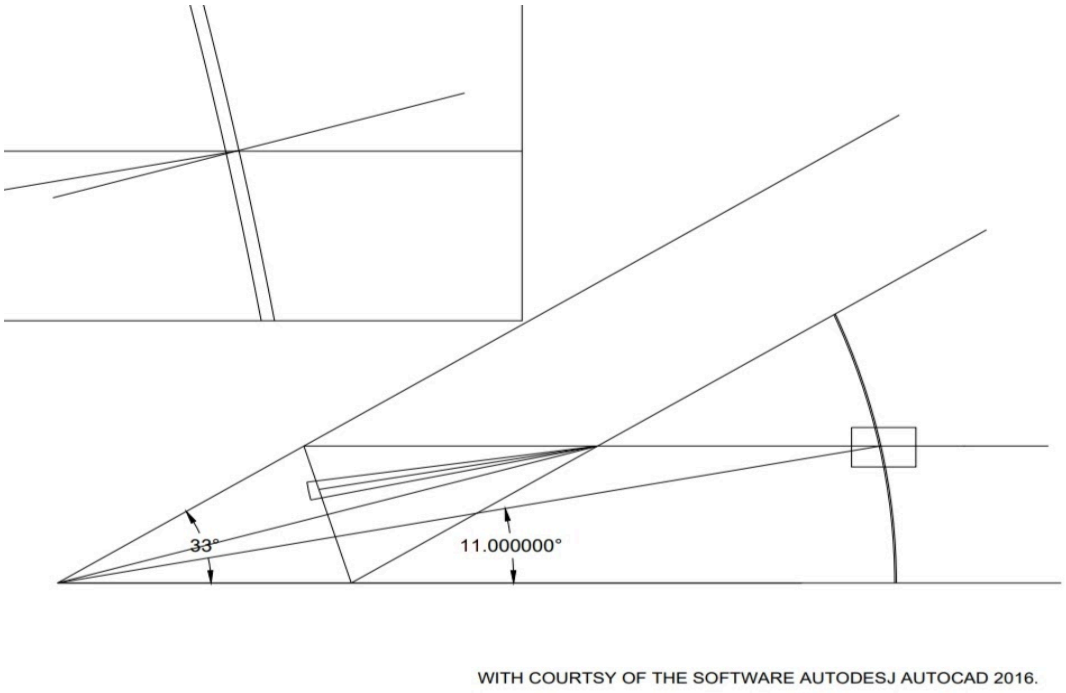


Fig. 1

Author: e-mail: mbubna24@gmail.com



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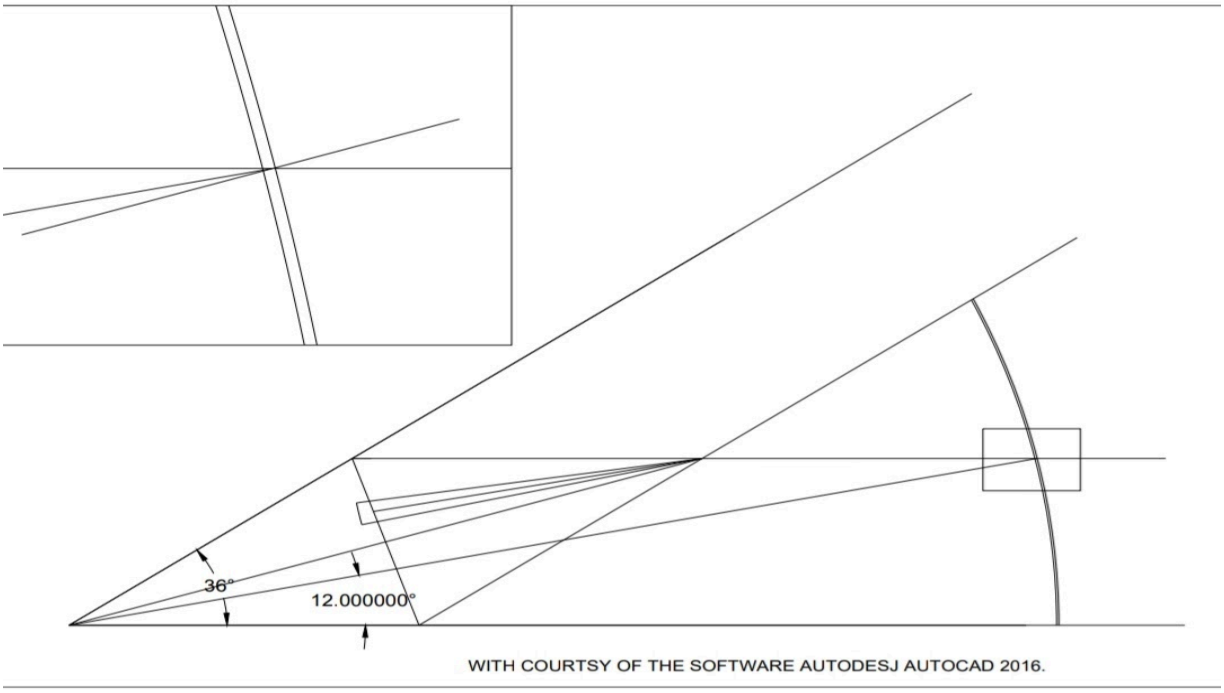

Fig. 3

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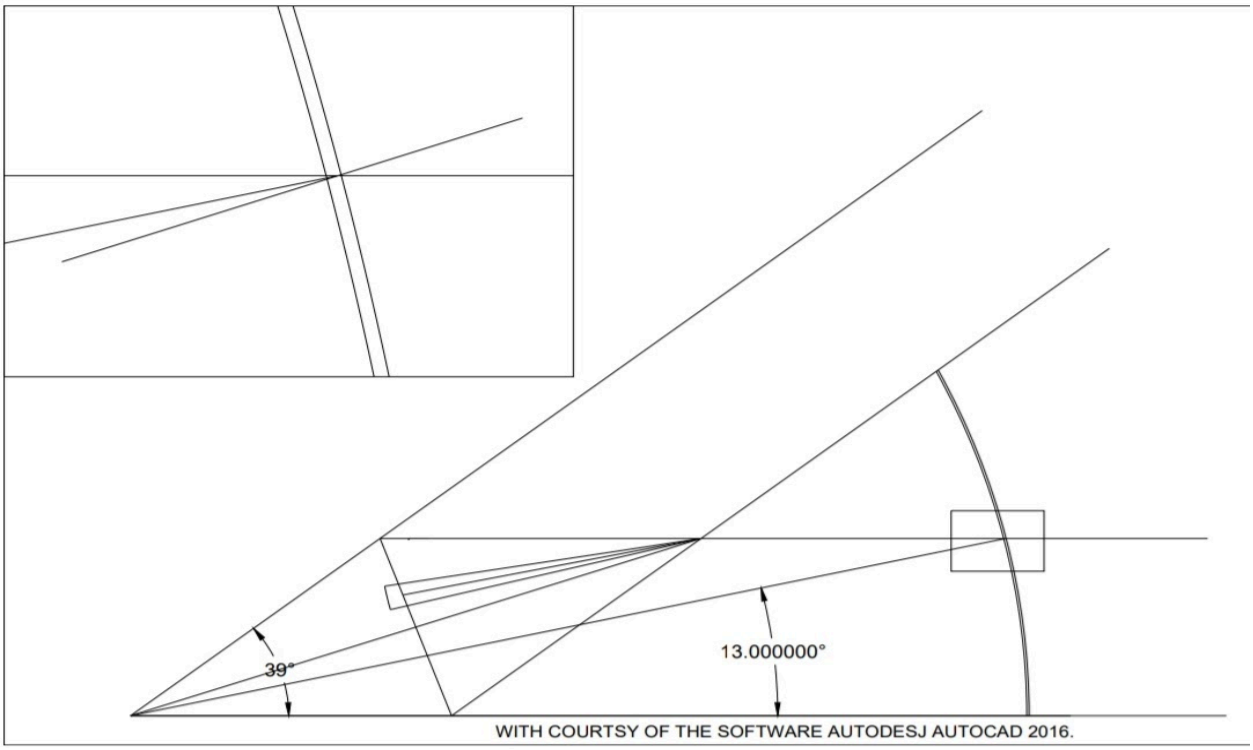

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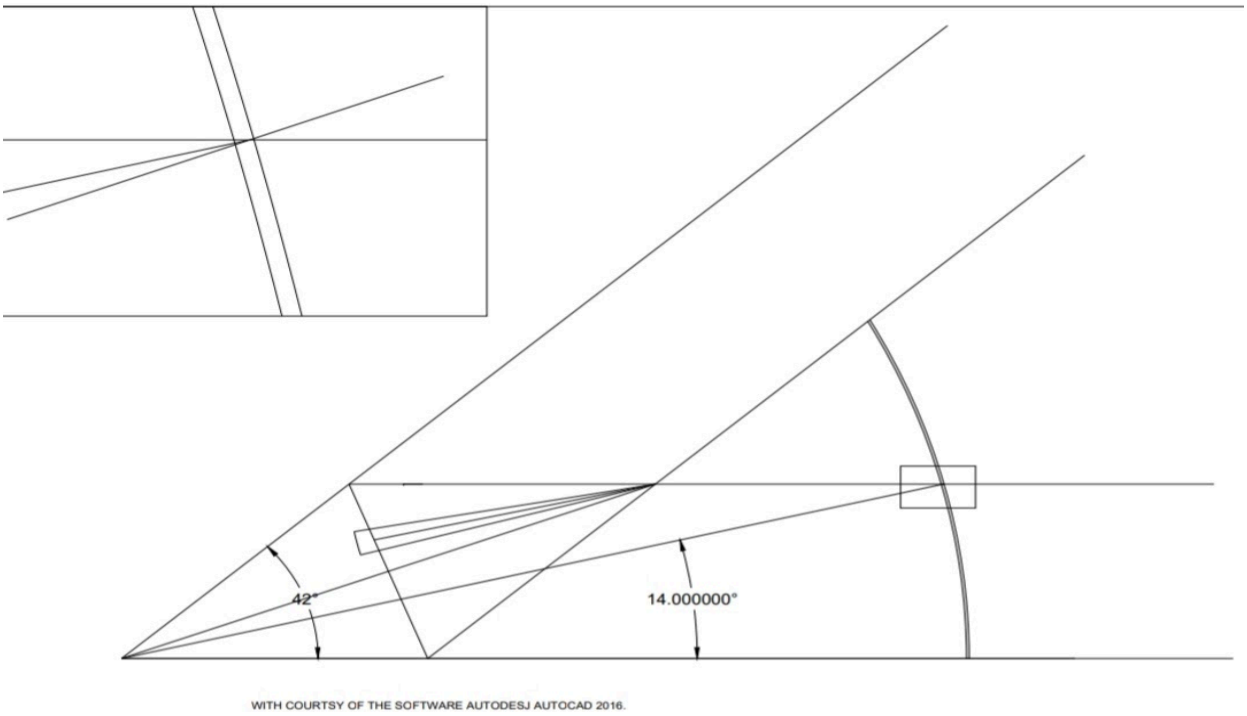

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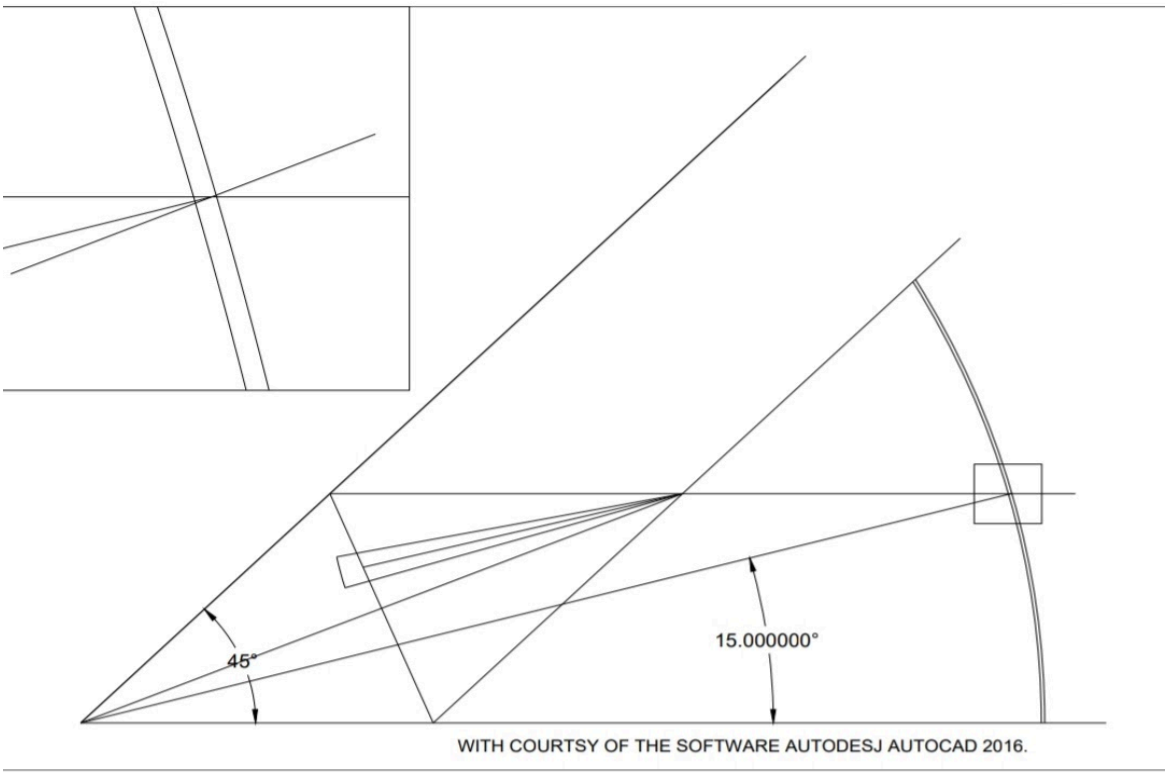

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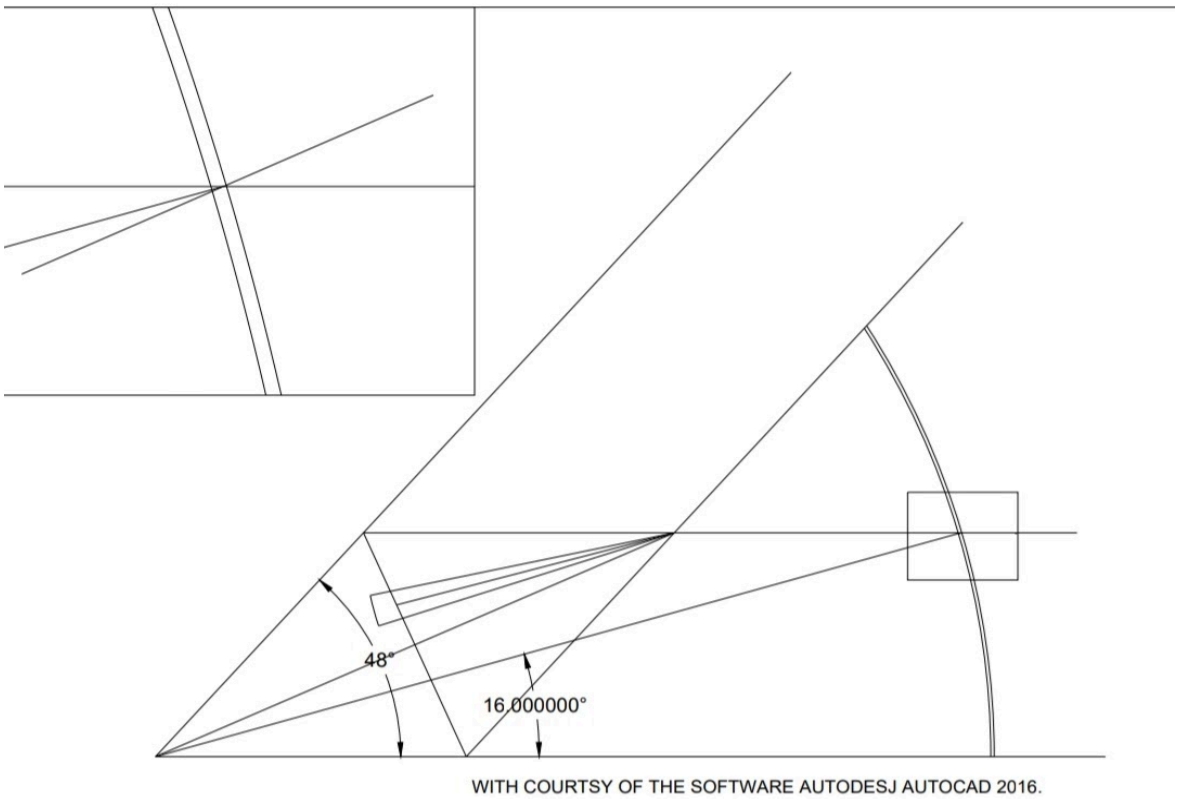

Fig. 7

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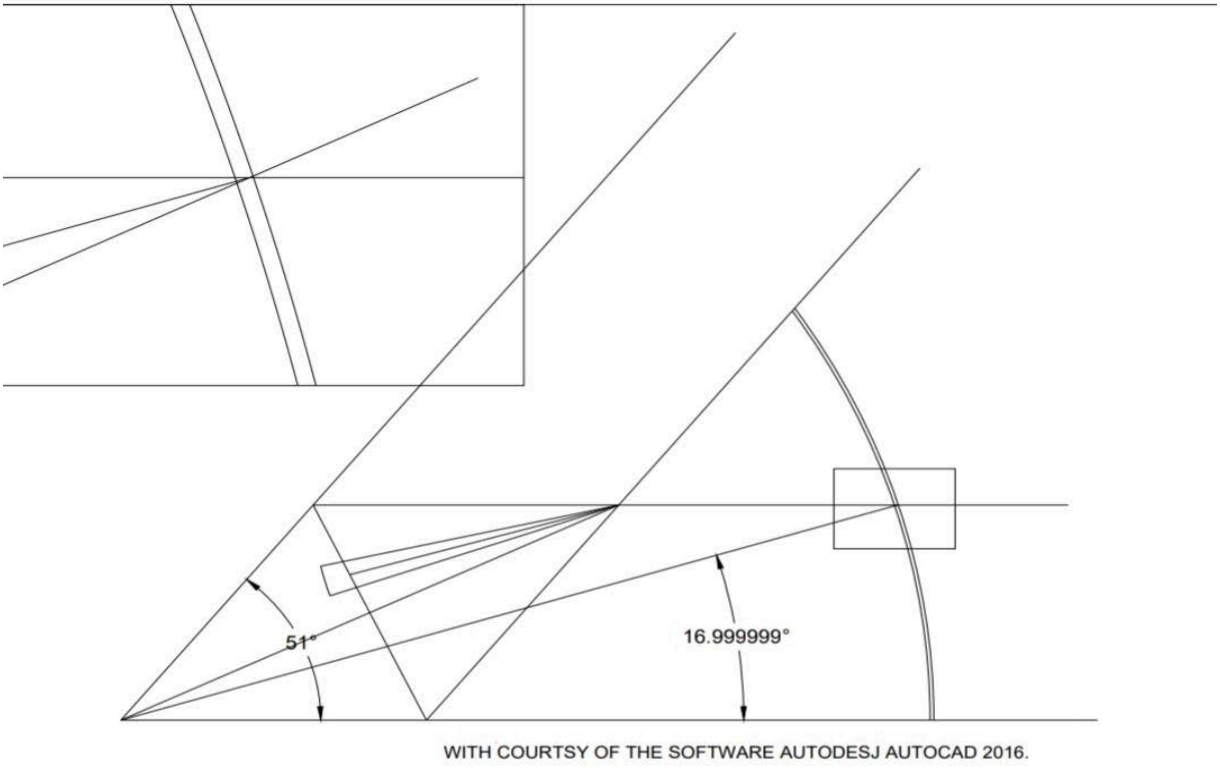

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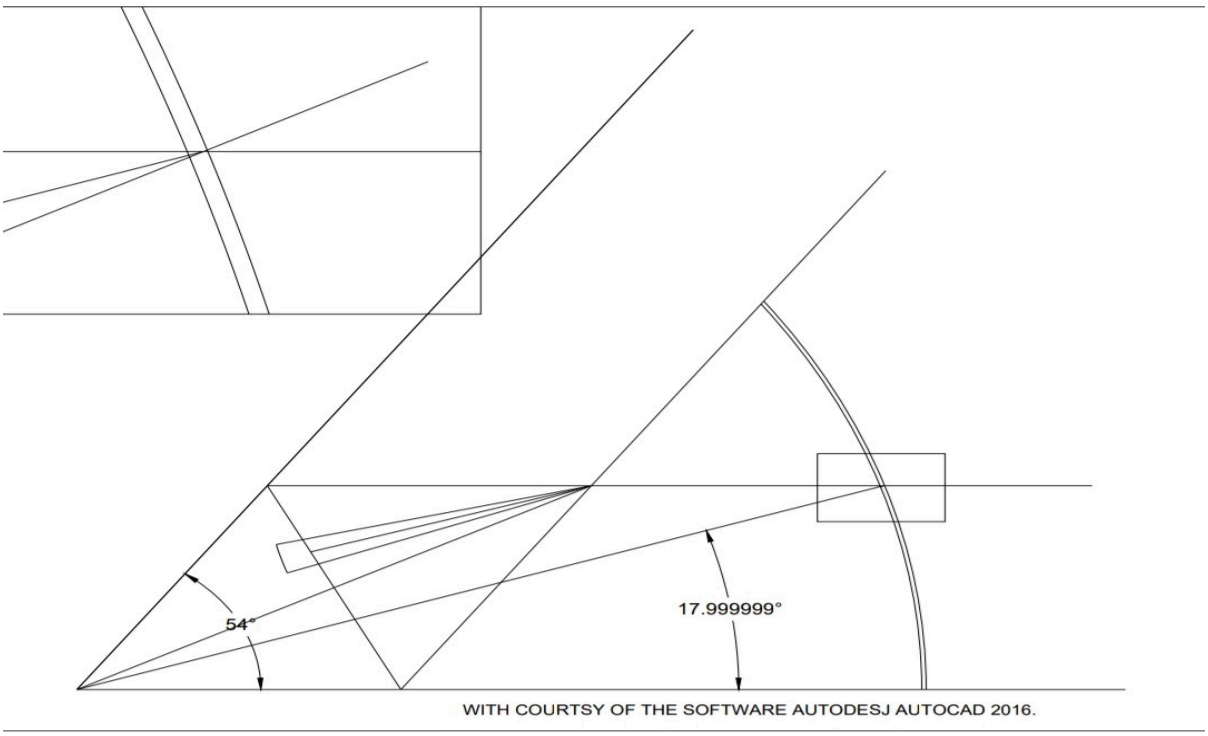

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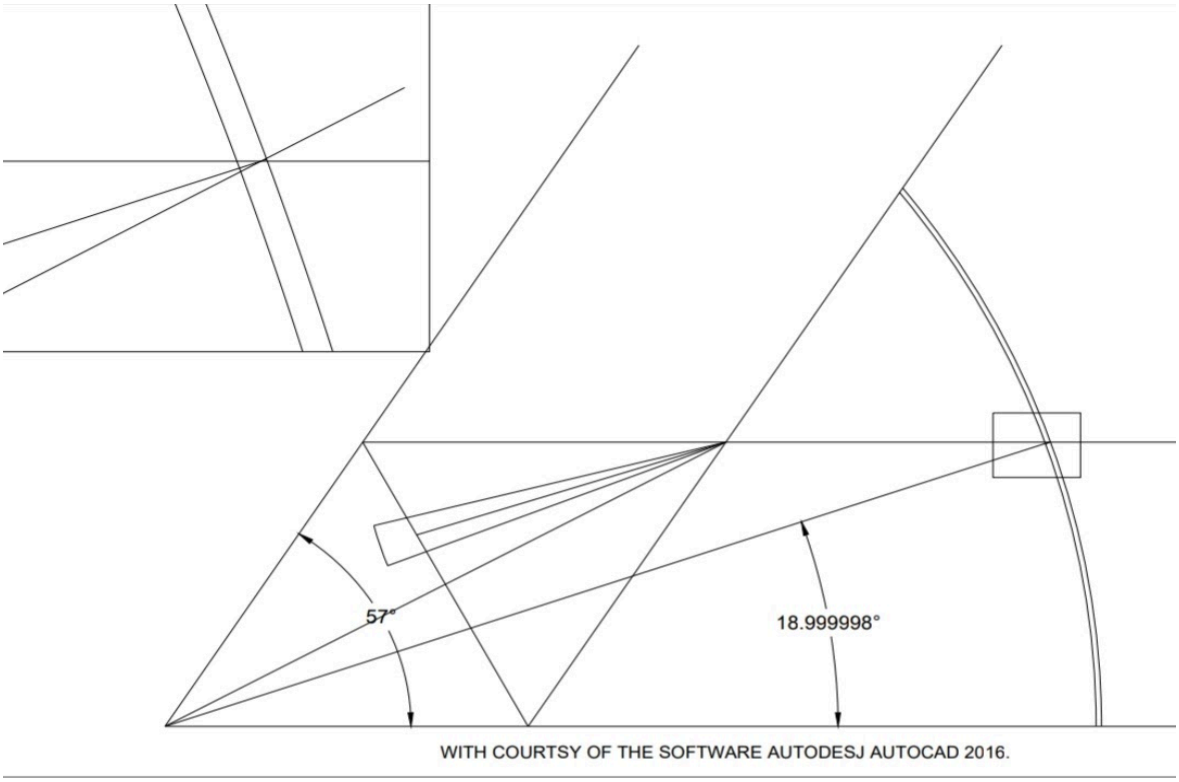

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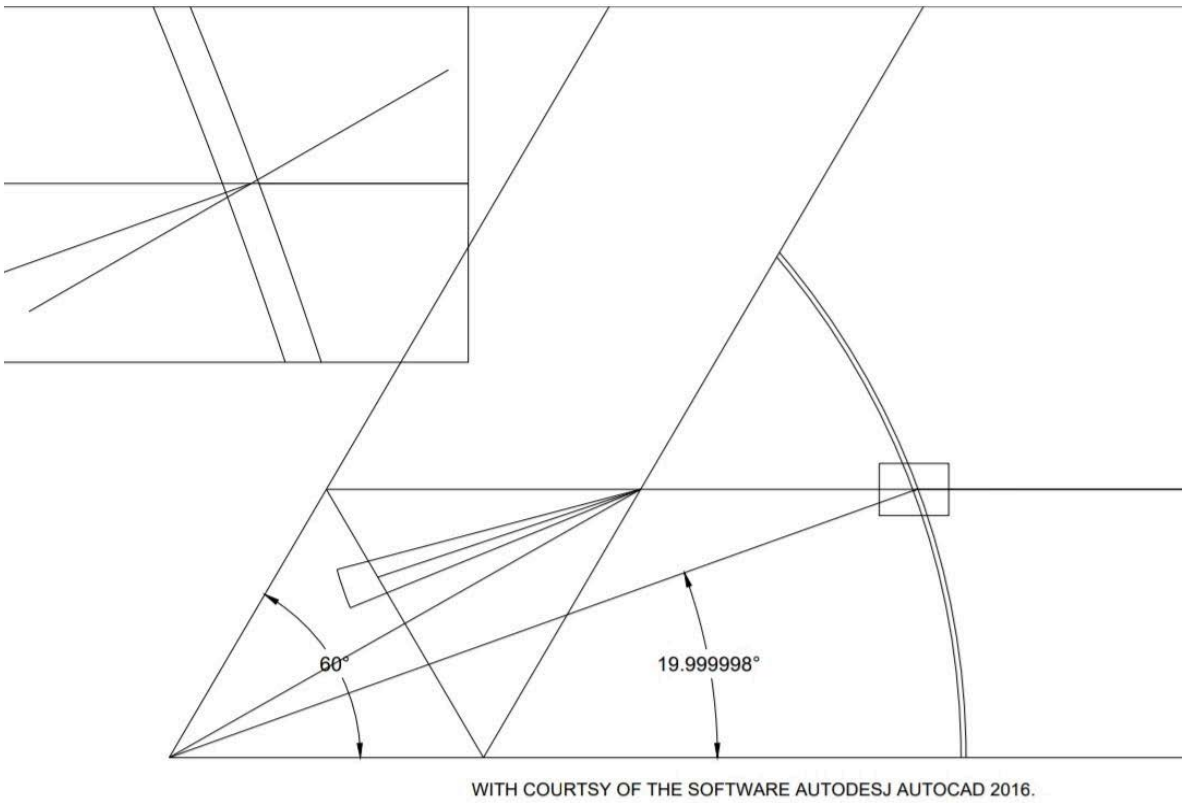

Fig. 11

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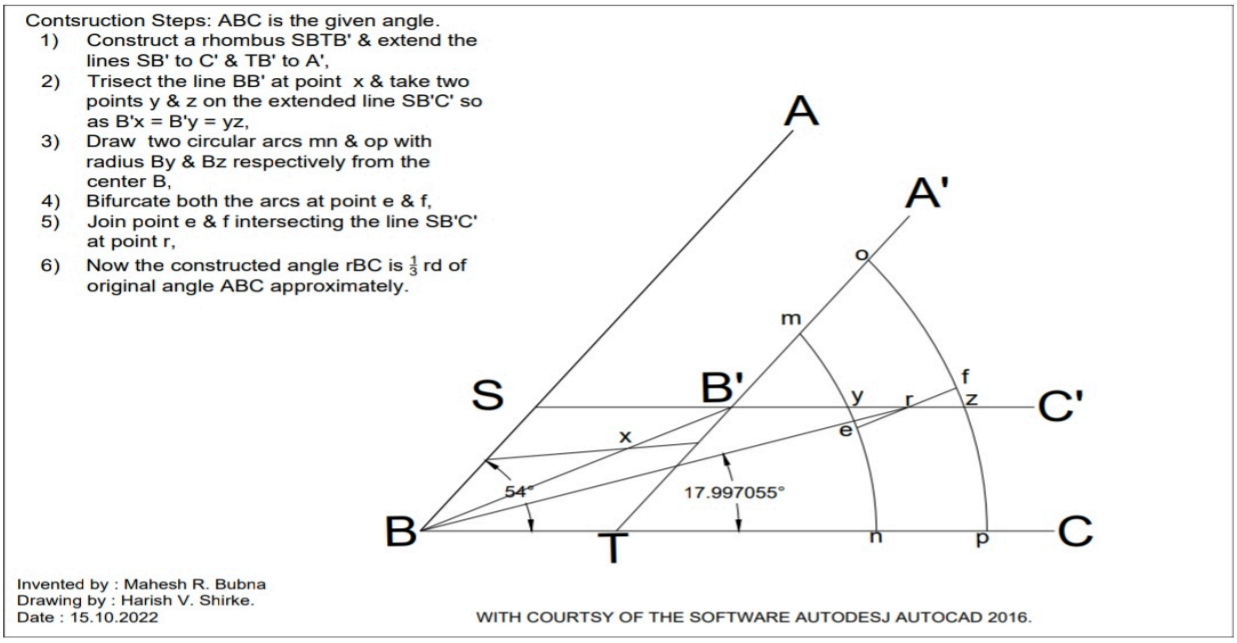
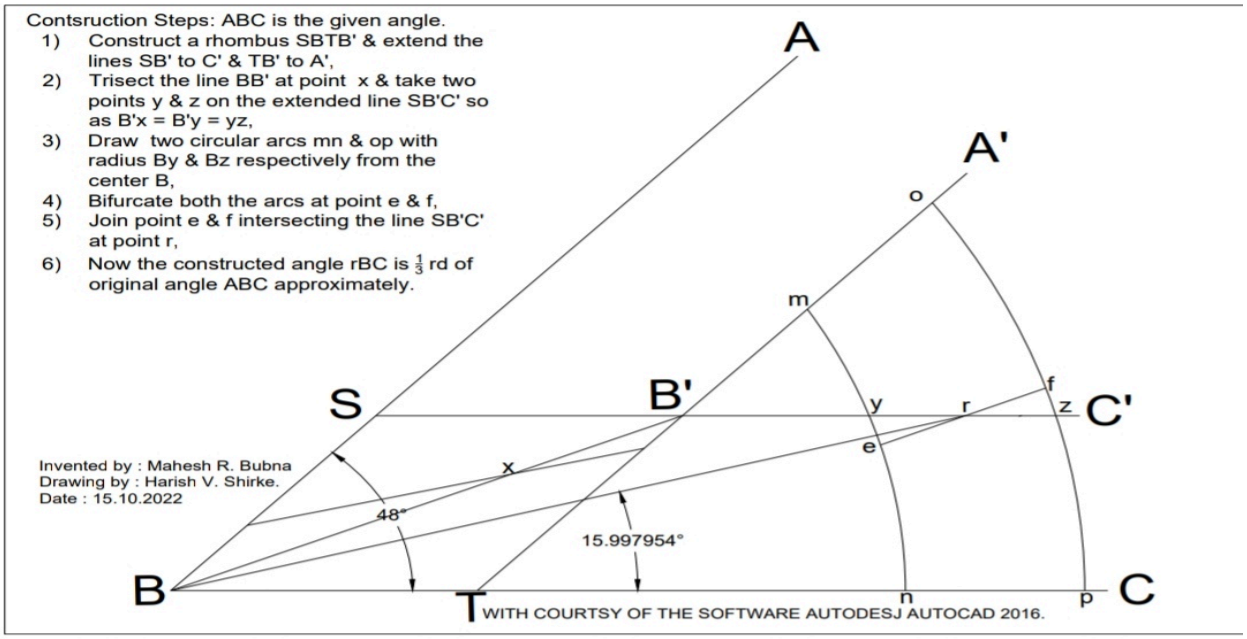


Fig. 12



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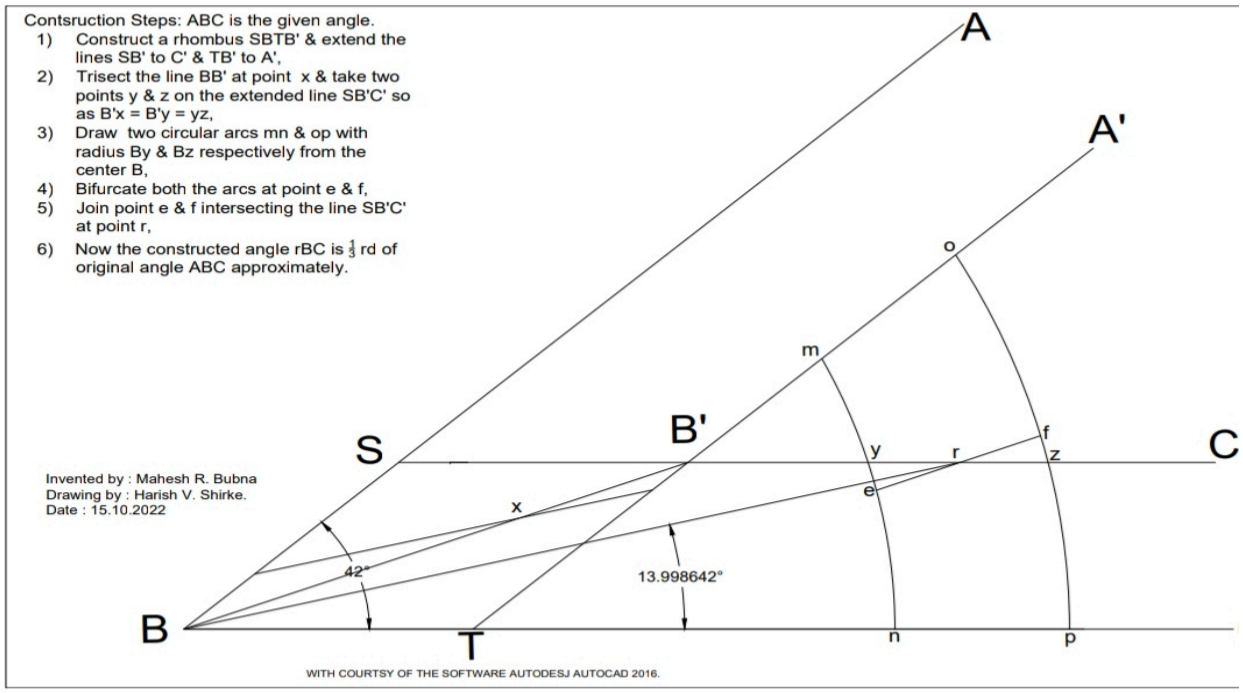

Fig. 14

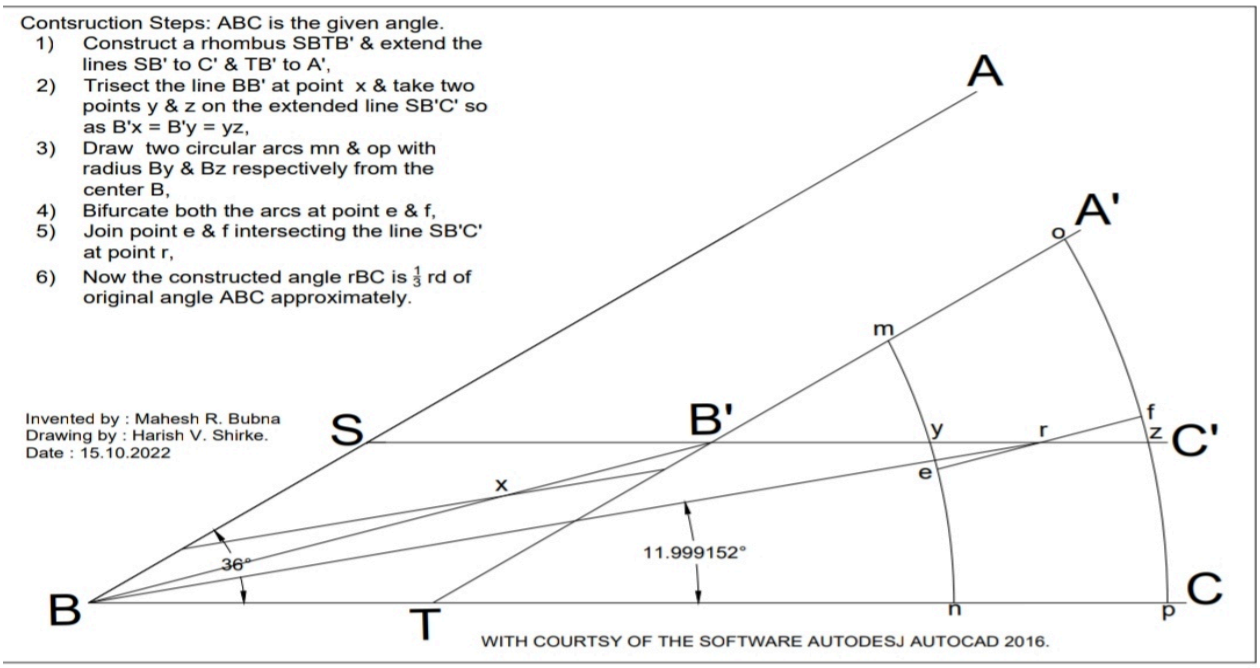

Fig. 15

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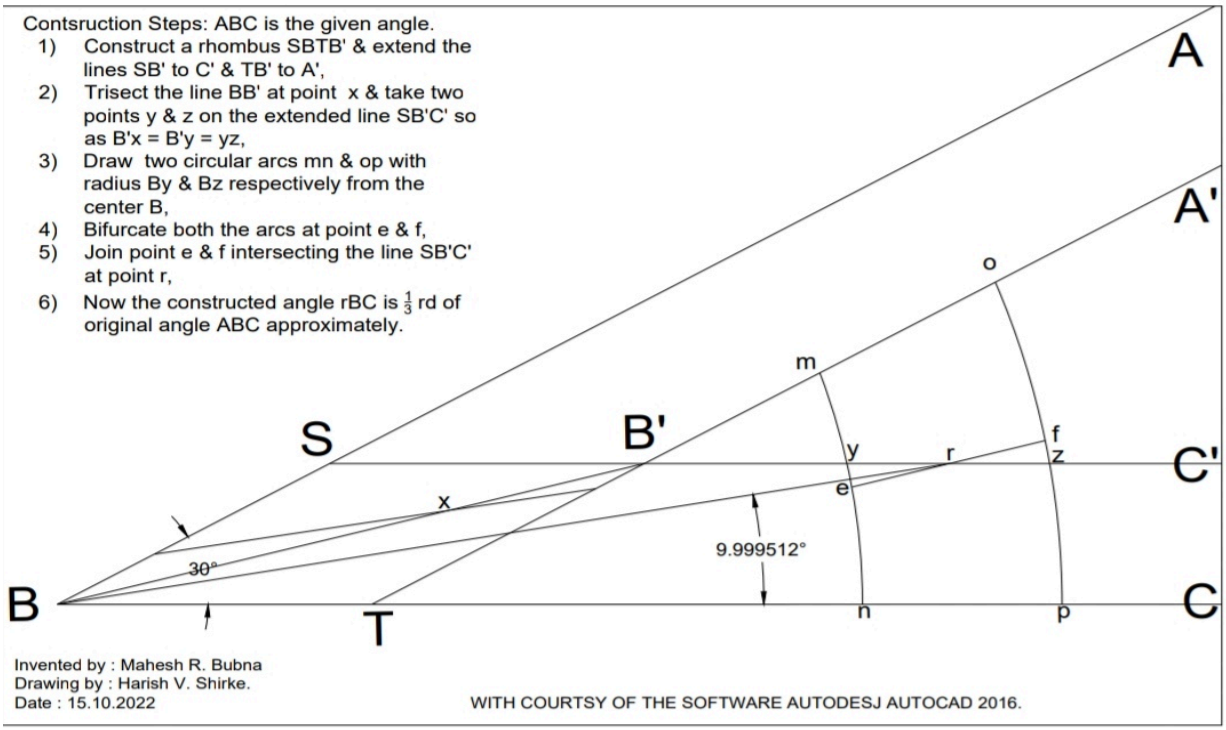

Fig. 16