
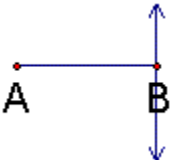
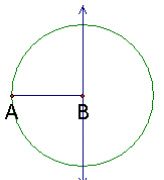
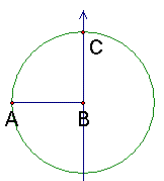
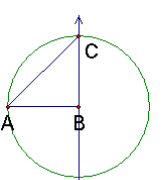
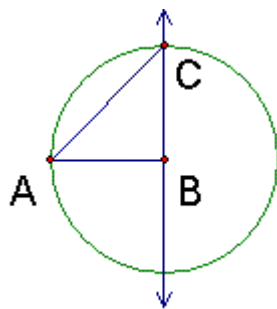


Construct the Square Root of 2

How to construct the square root of 2.

	<p>1. Let the line segment AB be unity (A line segment of length 1).</p>
	<p>2. Construct a line perpendicular to AB at B.</p>
	<p>3. Construct a circle with center B and radius AB.</p>
	<p>4. Mark the intersections of the circle and the perpendicular line C.</p>
	<p>5. Draw line segment CA. The length of line segment CA is the square root of 2.</p>

Proof of Construction



9. # $2 = AC^2$.
10. # $AC = \sqrt{2}$, QED.

1. The length of AB is taken to be unity.
2. # The length of AB is taken to be 1 by definition.
3. # Since the segments AB and BC are both radii of the same circle, they are congruent, making BC of length 1.
4. # Since AB is perpendicular to BC (see Euclid's Proposition ??), \square CBA is a right angle.
5. # By the Pythagorean Theorem (see Euclid's Proposition 47), $AB^2 + BC^2 = AC^2$.
6. # But, since AB and BC are unity, $AB = BC = 1$.
7. # $1^2 + 1^2 = AC^2$
8. # $1 + 1 = AC^2$.

Source: http://McAdamsMath.tripod.com/numbers/cons_sqrt_2.pdf