
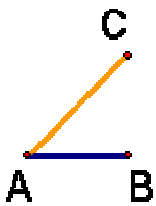
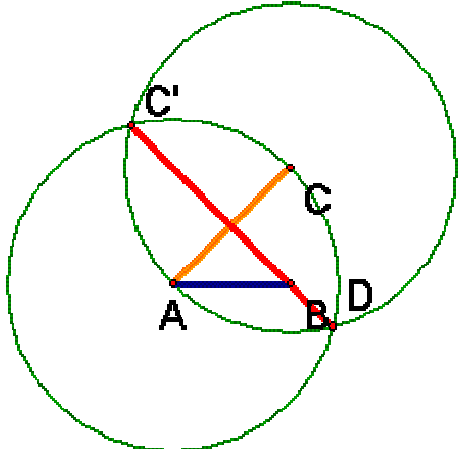


## Construct the Square Root of 6

This construction uses the constructions of  $\sqrt{2}$  and  $\sqrt{3}$ . The algebraic formula is  $(\sqrt{2})^2 \times (\sqrt{3})^2 = (\sqrt{6})^2$ . The method for constructing  $\sqrt{2}$  is found at [http://mcadamsmath.tripod.com/numbers/cons\\_sqrt\\_2.pdf](http://mcadamsmath.tripod.com/numbers/cons_sqrt_2.pdf). The method for constructing  $\sqrt{3}$  is found at [http://mcadamsmath.tripod.com/numbers/cons\\_sqrt\\_3.pdf](http://mcadamsmath.tripod.com/numbers/cons_sqrt_3.pdf).

### How to construct the square root of 5:

	1. Let the line segment AB be unity (A line segment of length 1).
	2. Construct $\sqrt{2}$ using AB as unity.
	3. Construct $\sqrt{3}$ using AC as a base. The segment C'D is of length $\sqrt{6}$ .
<b>Proof</b> <ol style="list-style-type: none"><li>1. The length of AB is taken to be 1 by definition.</li><li>2. By construction, the length of AC is <math>\sqrt{2}</math>.</li><li>3. By construction, the length of C'D is <math>\sqrt{3} \times \sqrt{2} = \sqrt{6}</math>.</li></ol>	

Source: [http://McAdamsMath.tripod.com/numbers/cons\\_sqrt\\_6.pdf](http://McAdamsMath.tripod.com/numbers/cons_sqrt_6.pdf)