

Examining Mathematical Proof through the Lens of Euclidean Constructions

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Euclid's First Three Postulates (from Wolfram MathWorld)

1. A straight line segment can be drawn joining any two points.
2. Any straight line segment can be extended indefinitely in a straight line.
3. Given any straight line segment, a circle can be drawn having the segment as radius and one endpoint as center.

Basic Euclidean Constructions

Tools: compass & straightedge, patty paper, MIRA™, graphing technology

1. Copy a line segment.
2. Copy an angle.
3. Bisect a line segment.
4. Bisect an angle.
5. Construct a perpendicular line through a point on that line.
6. Construct a perpendicular line through a point not on that line.
7. Construct a line parallel to a given line through a point not on that given line.