Defined and Undefined Terms

Jonathan R. Bacolod

Sauyo High School

What are the Components of a Mathematical System?

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2. Defined Terms

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3. Axioms or Postulates

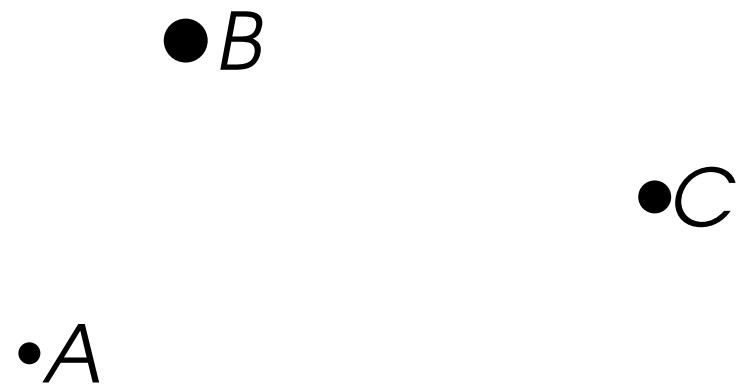
What are the Components of a Mathematical System?

1. Undefined Terms
2. Defined Terms
3. Axioms or Postulates
4. Theorems

What are Undefined Terms?

Undefined terms are terms that can be described but cannot be defined.

What are the Undefined Terms in Geometry?



1. Point

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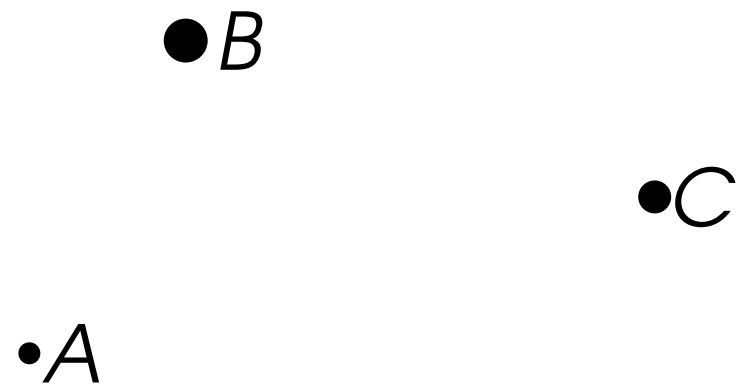

1. Point
   - indicates a location (or position) in space

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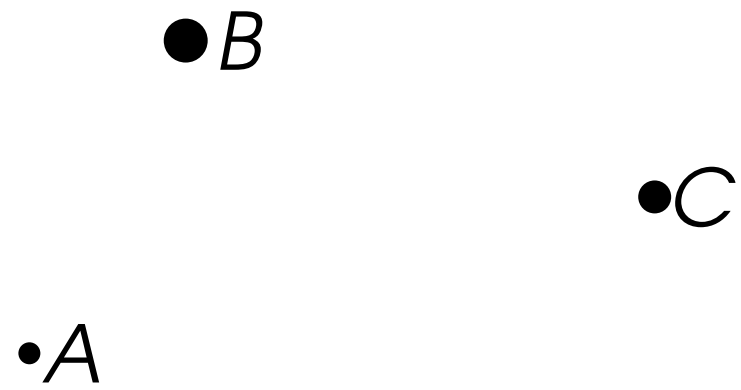

1. Point
   - indicates a location (or position) in space
   - has no dimension (actual size)

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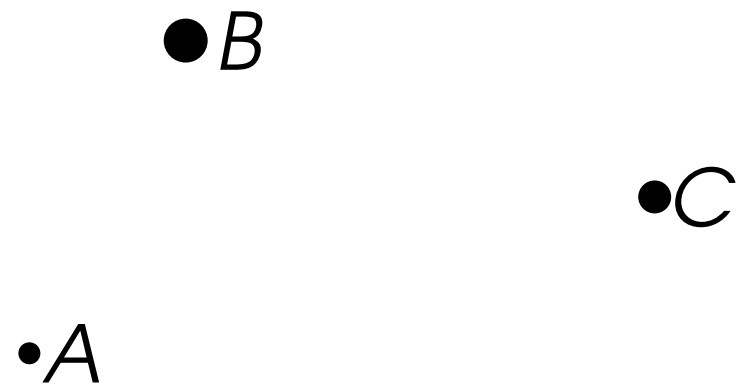

1. Point
   - indicates a location (or position) in space
   - has no dimension (actual size)
   - has no length, no width (thickness), and no height

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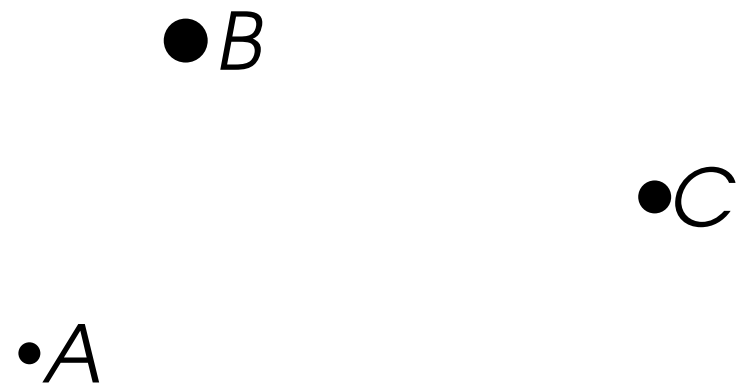

1. Point
   - indicates a location (or position) in space
   - has no dimension (actual size)
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   - usually named with a capital letter

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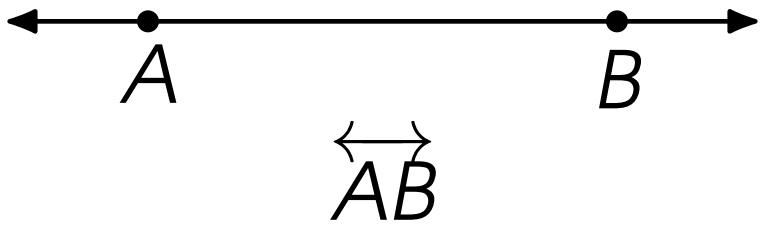
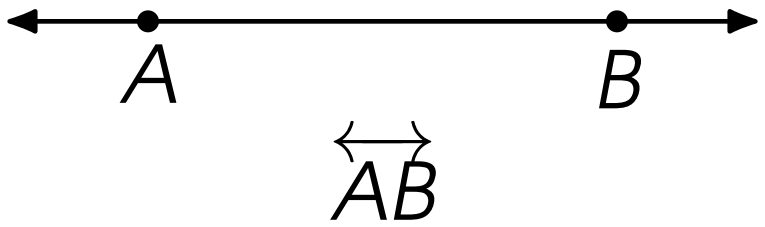


2. Line

What are the Undefined Terms in Geometry?



2. Line
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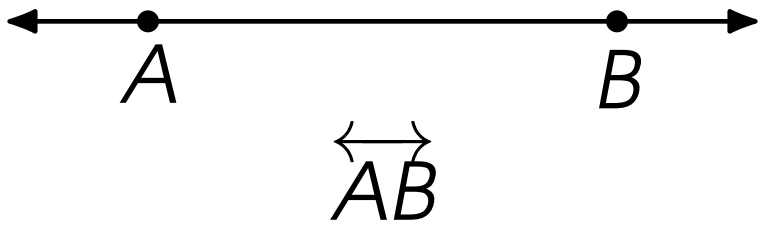

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   - has no thickness
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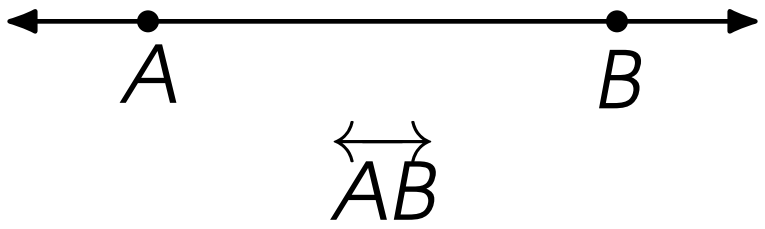

2. Line
   - has no thickness
   - length extends in one dimension
   - goes on forever in both directions

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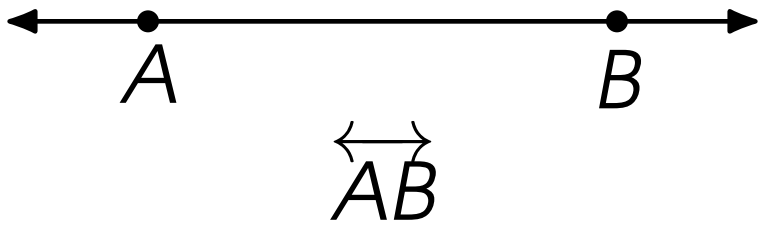

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   - goes on forever in both directions
   - has infinite length, zero width, and zero height

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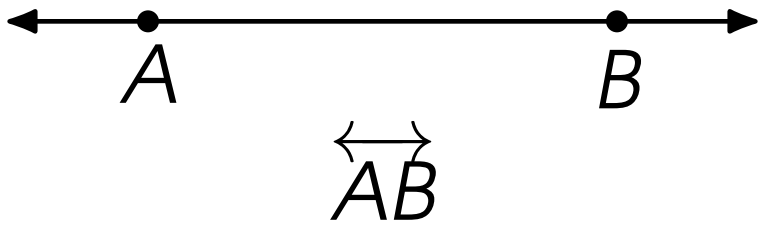

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   - is assumed to be straight

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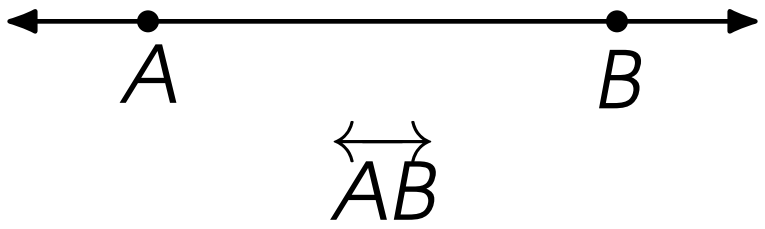

2. Line
   - has no thickness
   - length extends in one dimension
   - goes on forever in both directions
   - has infinite length, zero width, and zero height
   - is assumed to be straight
   - is drawn with arrowheads on both ends

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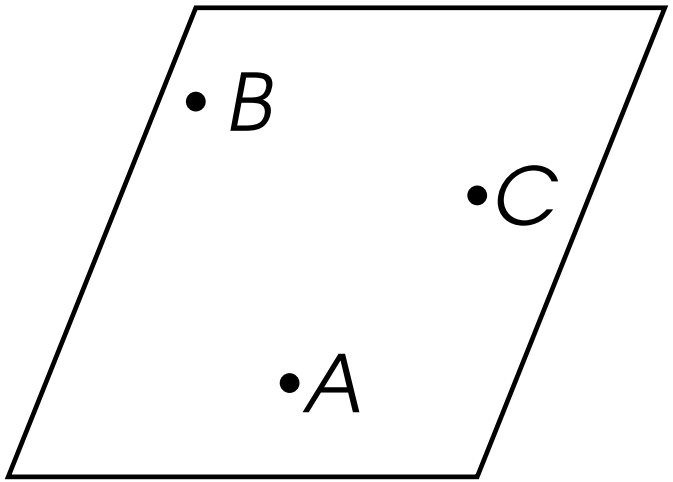

3. Plane

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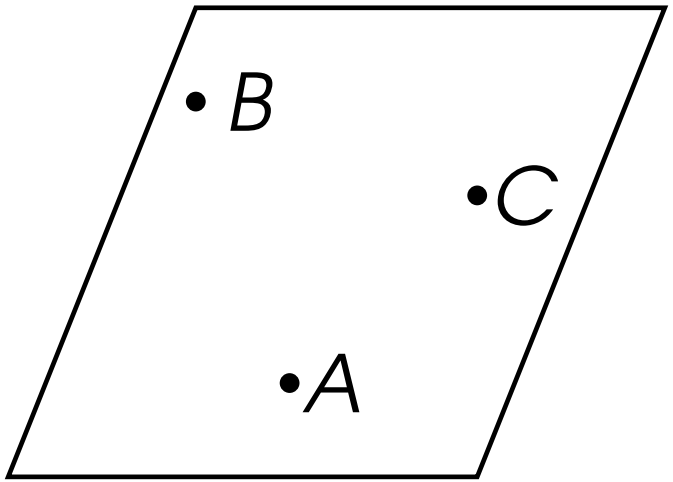

3. Plane
   - has two dimensions

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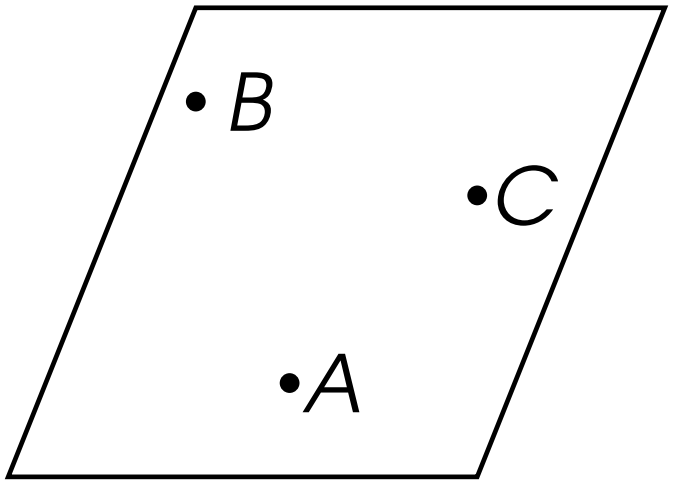

3. Plane
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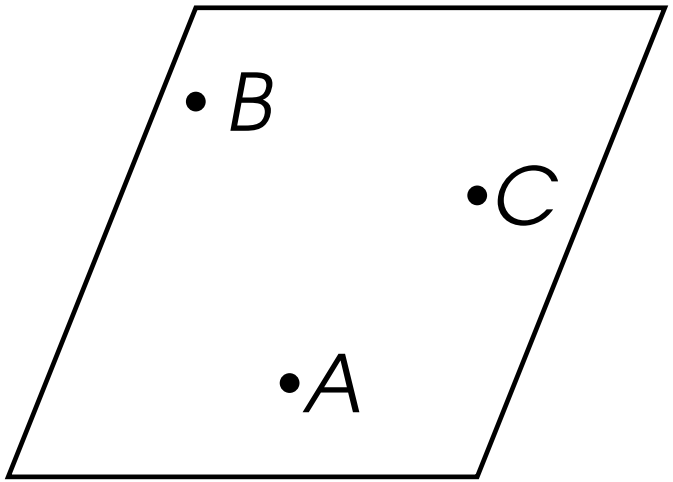

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   - forms a flat surface extending indefinitely in all directions

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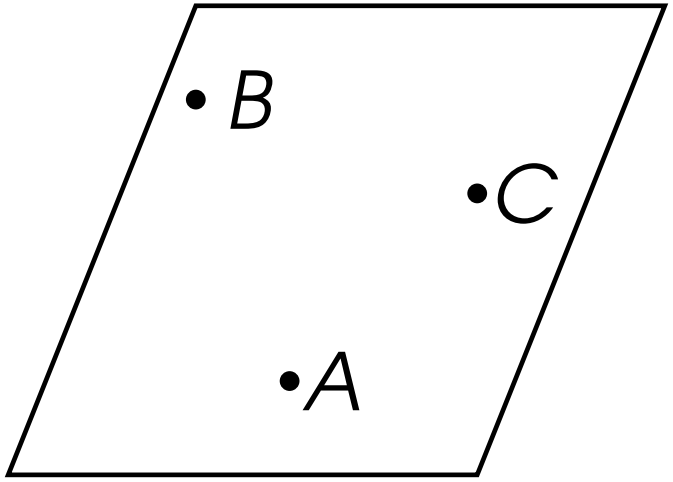

3. Plane
   - has two dimensions
   - has infinite length, infinite width and zero height (thickness)
   - forms a flat surface extending indefinitely in all directions
   - is drawn as a four-sided figure resembling a tabletop or a parallelogram

What are Defined Terms?

Defined terms are terms with an exact definition or a specific description. They include a specific category and critical attributes.

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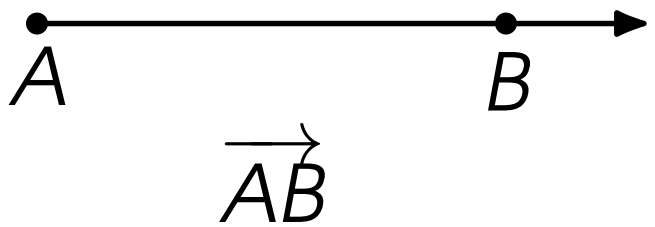
6. Ray: a part of a line beginning at an endpoint and infinitely extends in one direction. To name a ray, we usually start from an endpoint.



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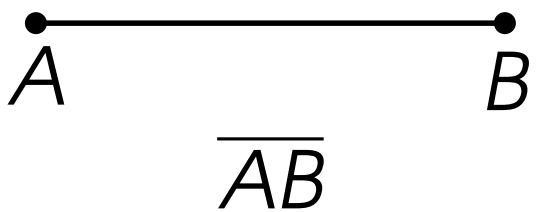
7. Line Segment: part of a line consisting of two points, called endpoints, and the set of all points between the two endpoints



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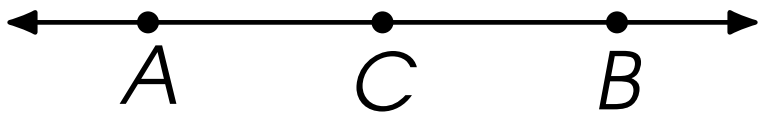
8. Opposite Rays: two rays that share the same endpoint but extend towards opposite directions



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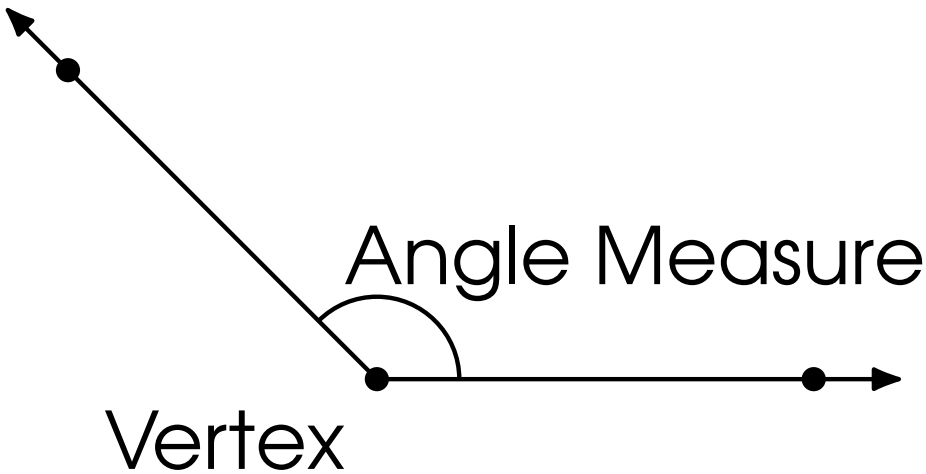
9. Angle: union of two noncollinear rays that share the same endpoint called the vertex. The two rays are referred to as the sides of the angle and the opening between the two rays determines the angle measure.



Thank you for watching.