2.1 Perpendicularity

Section Objectives:

- 1. Recognize the need for clarity and concision in proofs
- 2. Understand the concept of perpendicularity

Definition of Perpendicular: If lines, rays, or segments intersect and form right angles, then they are perpendicular.

Symbols - perp	endicular 上	not perpendicular	¥
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Example of a proof using the definition of perpendicular:

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Given: a \perp b
Prove: \measuredangle 1 \cong \measuredangle 2
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Note: Perpendicularity, right angles, and 90° all go together – this is evidence that can be used to prove one-another. Be careful when building your case since you shouldn't simply exchange one for the other. (notice the red arrows above)

Assumptions: As is the case with right angles, you may <u>NOT</u> assume perpendicularity from a diagram!

Application: The x-axis and y-axis are perpendicular number lines that intersect at one point called the origin. The coordinates at the origin as an ordered pair are (0, 0). This means the distances on the x and y number lines needed to reach that point on a coordinate plane are both zero units!