5.6

Real-Life Application: When Will I Ever Use This?

For use with pages 302–308

NAME

Expandable Gate

You are using an expandable gate to prevent your baby sister from crawling off your front porch and getting injured. A diagram of the expandable gate is shown below.



- As the gate is expanded and AD becomes longer, △AB₁D₁ changes to become △AB₂D₂. Use the Converse of the Hinge Theorem to compare m∠AB₁D₁ and m∠AB₂D₂.
- **2.** Name an angle whose measure decreases as \overline{AE} gets longer.
- **3**. Name a distance that decreases as \overline{AE} gets longer.
- **4.** What happens to $m \angle ACE$ as \overline{AE} gets longer?
- **5.** As the gate is expanded, there is one position in which $\triangle ABD \cong \triangle CBD$. At that position, $\overline{AD} \cong \overline{CD}$. Compare AD and CD before and after this position occurs.