



## Geometry Software Investigation

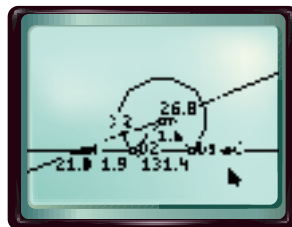
**Step 4** Construct radius  $\overline{BD_2}$  so that  $D_2$  lies on the other intersection point of circle  $B$  and  $\overline{AC}$ .

• **KEYSTROKES:** F2 ▼ ▼ ENTER

Place the pointer on  $B$  and press ENTER. Then move the pointer to  $D_2$  and press

ENTER CLEAR.

**Step 5** Find the measures of  $\angle ABD_2$ ,  $\angle BD_2A$ , and  $\overline{AD_2}$  in  $\triangle ABD_2$ .



### Analyze

1. Which measures are the same in both triangles?
2. Repeat the activity using different measures for  $\angle A$ ,  $\overline{BD}$ , and  $\overline{AB}$ . How do the results compare to the earlier results?

### Make a Conjecture

3. Compare your results with those of your classmates. How do the results compare?
4. What would have to be true about circle  $B$  in order for there to be one unique solution? Test your conjecture by repeating the activity.
5. Is it possible, given the measures of  $\overline{BD}$ ,  $\overline{AB}$ , and  $\angle A$ , to have no solution? Test your conjecture and explain.