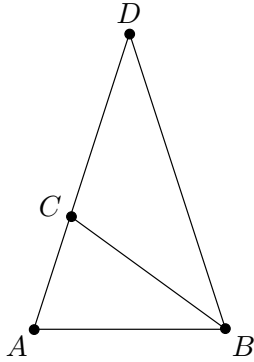
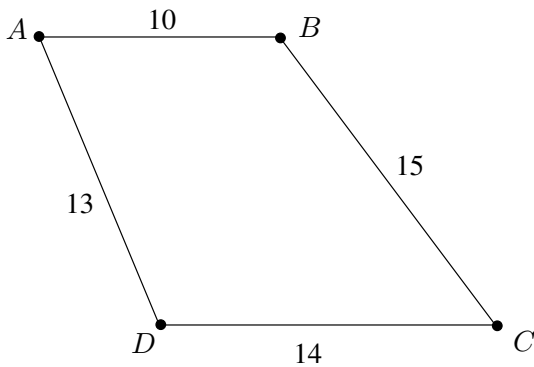


Handout #2: Some Challenge Problems

1. In the following diagram,  $AB = BC = CD$  and  $AD = BD$ . Find the measure of angle  $D$ .



2. In this diagram,  $\overleftrightarrow{AB}$  is parallel to  $\overleftrightarrow{CD}$  and the side lengths are as shown. Find the area enclosed by quadrilateral  $ABCD$ .



3. In the diagram below, the small circle is centered at  $O$ , the large one is centered at  $P$ , and the two circles intersect only at  $A$ . The segments  $\overline{BC}$  and  $\overline{PD}$  have lengths as shown. Find the length of  $\overline{CD}$ .

