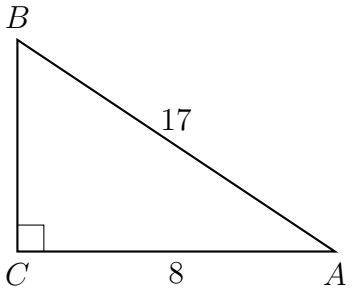
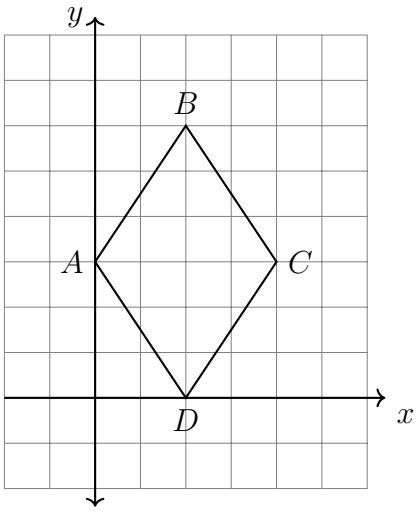
8.7 Classwork: Distance formula and Pythagorean theorem **CCSSM**

1. In the diagram below of right triangle ABC, $AC = 8$, and $AB = 17$. Find the length BC using the Pythagorean theorem.



2. What is the distance between the points $(3, 4)$ and $(6, 8)$?

3. Show that quadrilateral $ABCD$ is a rhombus by calculating the lengths of its sides. $A(0, 3)$, $B(2, 6)$, $C(4, 3)$, $D(2, 0)$



4. Rhombus $STAR$ has vertices $S(-1, 2)4$, $T(2, 3)$, $A(3, 0)$, and $R(0, -1)$. What is the perimeter of rhombus $STAR$?

5. The hypotenuse of right triangle ABC is the radius of a circle centered at the origin, as shown. Use the lengths of the legs of the triangle and the Pythagorean formula to calculate the radius of the circle.