

1. Use SAS to show that if $\triangle ABC$ is a triangle such that $\overline{AB} \cong \overline{AC}$, then $\angle ABC \cong \angle ACB$.
2. Use ASA to show that if $\triangle ABC$ is such that $\angle ABC \cong \angle ACB$, then $\overline{AB} \cong \overline{AC}$.
3. Let $\triangle ABC$ be the triangle in the plane with vertices $A = (0, 0)$, $B = (3, 1)$, and $C = (1, 2)$ and let $\triangle DEF$ be the triangle in the plane with vertices $D = (0, 0)$, $E = (\frac{3-\sqrt{3}}{2}, \frac{1+3\sqrt{3}}{2})$, and $F = (\frac{1-2\sqrt{3}}{2}, \frac{2+\sqrt{3}}{2})$. How would you show that the triangles $\triangle ABC$ and $\triangle DEF$ are/aren't congruent?