

If $AB = BC$ then angle A is equal to angle C and we will have:

$$\angle A + \angle B + \angle C = 180^\circ \Rightarrow$$

$$\Rightarrow \begin{cases} \angle B = 50^\circ \\ \angle A = \angle C \end{cases} \Rightarrow 2\angle C + 50^\circ = 180^\circ \Rightarrow 2\angle C = 130^\circ \Rightarrow$$

$$\Rightarrow \angle C = 65^\circ.$$

Answer: $\angle C = 65^\circ$.