

11 The length of the legs in a $45^\circ\sim 45^\circ$ right triangle are equal. For convenience we let $r = 1$ as shown in *Figure 11a*.

Next, find x and y : $x^2 + y^2 = 1^2 \Rightarrow x^2 + x^2 = 1 \Rightarrow 2x^2 = 1 \Rightarrow x^2 = \frac{1}{2} \Rightarrow x = \frac{1}{\sqrt{2}}$. Thus $x = y = \frac{1}{\sqrt{2}}$.

$$\sin 45^\circ = \frac{1}{\sqrt{2}} \approx 0.7071 \quad \cos 45^\circ = \frac{1}{\sqrt{2}} \approx 0.7071$$

These results are supported in *Figure 11b*.

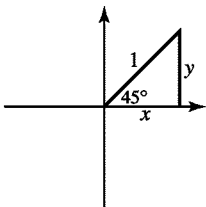


Figure 11a

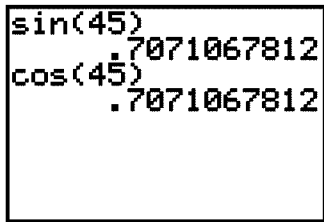


Figure 11b