

2.3. Using a Calculator to Approximate the Trig Functions

Ex. $\sin 30^\circ = \frac{1}{2} = \boxed{0.5}$

Ex. $\cos(112^\circ) \approx \boxed{-0.3746}$

$\sec(112^\circ) = \frac{1}{\cos(112^\circ)}$
 $\approx \boxed{-2.6695}$

Find $\cos(112^\circ) \approx -0.3746$ then
 use $\boxed{x^{-1}}$ or $\boxed{1/x}$ key or
 use $1/\text{Ans}$

$\csc(67^\circ) = \boxed{1.0864}$

$\sin(67^\circ) \approx 0.9205 \Rightarrow \boxed{x^{-1}}$ key

Ex. Find $\sin(41^\circ 32' 6'')$

$41^\circ 32' 6'' = \left(41 + \frac{32}{60} + \frac{6}{3600}\right)^\circ = 41.535^\circ$ Do not clear calculator!

$\sin(\text{Ans}) \approx 0.6630774356$
 $\approx \boxed{0.6631}$

When the trig function value is known, but the angle is unknown, we use the inverse trig functions.

Ex. Find an angle in $[0^\circ, 360^\circ)$ so that $\sin \theta = 0.75$

$\sin^{-1}(0.75) \approx \boxed{48.59^\circ}$

Note: $\sin 45^\circ = \frac{\sqrt{2}}{2} \approx 0.7071$