

BIG IDEAS

For Your Notebook

Big Idea 1

TEKS a.4

Using Trigonometric Functions

	sine	cosine	tangent
	$\sin \theta = \frac{\text{opp}}{\text{hyp}}$	$\cos \theta = \frac{\text{adj}}{\text{hyp}}$	$\tan \theta = \frac{\text{opp}}{\text{adj}}$
	cosecant	secant	cotangent
	$\csc \theta = \frac{\text{hyp}}{\text{opp}}$	$\sec \theta = \frac{\text{hyp}}{\text{adj}}$	$\cot \theta = \frac{\text{adj}}{\text{opp}}$

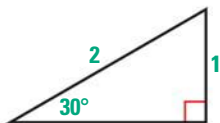
Big Idea 2

TEKS 2A.4.C

Using Inverse Trigonometric Functions

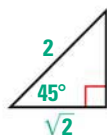
Inverse trigonometric functions can be used to solve trigonometric equations.

If $-1 \leq a \leq 1$, then the inverse sine of a is an angle θ , written $\sin^{-1} a = \theta$, where $\sin \theta = a$ and $-\frac{\pi}{2} \leq \theta \leq \frac{\pi}{2}$.



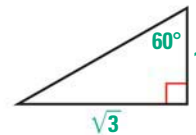
$$\sin^{-1} \frac{1}{2} = 30^\circ$$

If $-1 \leq a \leq 1$, then the inverse cosine of a is an angle θ , written $\cos^{-1} a = \theta$, where $\cos \theta = a$ and $0 \leq \theta \leq \pi$.



$$\cos^{-1} \frac{\sqrt{2}}{2} = 45^\circ$$

If a is any real number, then the inverse tangent of a is an angle θ , written $\tan^{-1} a = \theta$, where $\tan \theta = a$ and $-\frac{\pi}{2} < \theta < \frac{\pi}{2}$.



$$\tan^{-1} \sqrt{3} = 60^\circ$$

Big Idea 3

TEKS a.4

Applying the Law of Sines and Law of Cosines

Use the table below to help you remember when to apply each law.

If you know this information ...	use this law ...	to find this information.
angle-angle-side	Law of sines	remaining sides*
angle-side-angle	Law of sines	remaining sides*
side-side-angle	Law of sines	remaining side and one angle*
side-angle-side	Law of cosines	remaining side and one angle*
side-side-side	Law of cosines	two angles*

* Find the remaining angle by using the triangle sum theorem.