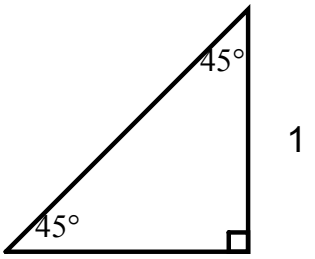
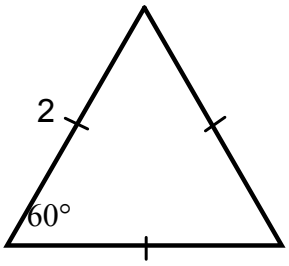
Today's Learning Goal(s): By the end of the class, I will be able to:

a) determine the trig ratios for 30^0, 60^0 and 90^0 using the special triangles.

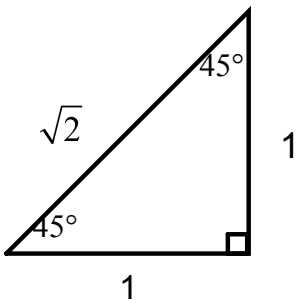
5.2 Evaluating Trigonometric Ratios of Special Angles

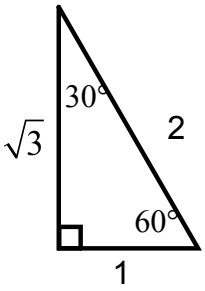
Date: _____





These triangles need to be memorized and are used to calculate the exact values for angles 30^o, 60^o, 45^o and their multiples.





$\sin 45° =$ $\csc 45° =$ $\sin 30° =$ $\csc 30° =$

$\cos 45° =$ $\sec 45° =$ $\cos 30° =$ $\sec 30° =$

$\tan 45° =$ $\cot 45° =$ $\tan 30° =$ $\cot 30° =$

$\sin 60° =$ $\csc 60° =$

$\cos 60° =$ $\sec 60° =$

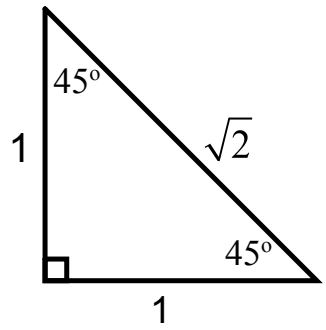
$\tan 60° =$ $\cot 60° =$

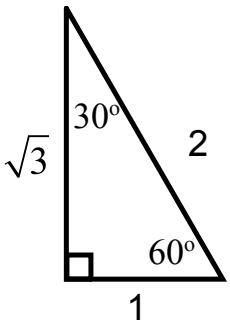
Ex.1 Draw the special triangles for the following and determine the **exact** value.

a) $\sin 45°$

list all 6 for each

b) $\sec 30°$





$\sin 45° =$ $\csc 45° =$ $\sin 30° =$ $\csc 30° =$

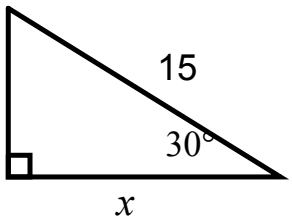
$\cos 45° =$ $\sec 45° =$ $\cos 30° =$ $\sec 30° =$

$\tan 45° =$ $\cot 45° =$ $\tan 30° =$ $\cot 30° =$

Ex.2 Determine the exact values of:

a) $\sin^2(60°) + \cos^2(60°)$

b)



Ex.3 Use the appropriate special triangle to determine the value of θ, if $0 \leq \theta \leq 90^{o}$.

a) $\tan\theta = \frac{1}{\sqrt{3}}$ b) $\cos\theta = \frac{1}{2}$ c) $\cos\theta = \frac{\sqrt{2}}{2}$

Homework: pp. 286-287 # 1 – 9 [13 – 15]