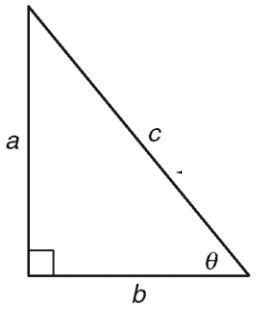
Name _____ Date _____ Class_____

Algebra 2H Notes Section 10-1

Right-Angle Trigonometry

A **trigonometric ratio** compares the lengths of two sides of a right triangle. The values of the ratios depend upon one of the acute angles of the triangle, denoted by the Greek letter theta (θ).
A **trigonometric function** is a function whose rule is given by a trigonometric ratio.

Trigonometric Functions



sine

cosine

tangent

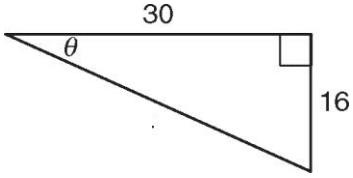
Reciprocal Trigonometric Functions

cosecant

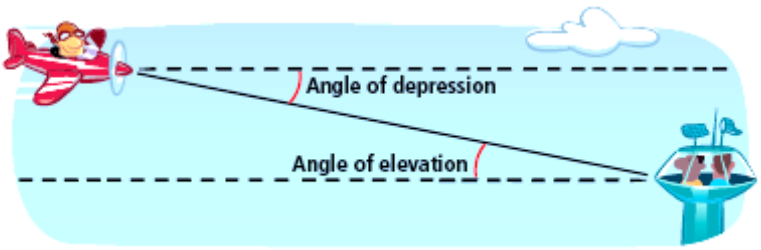
secant

cotangent

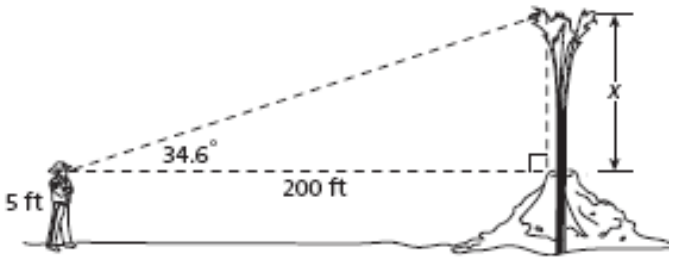
Example 1: Find the values of the six trigonometric functions for θ.



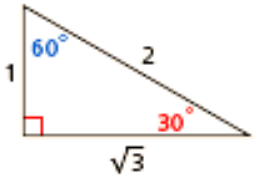
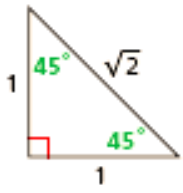
Example 2: A skateboard ramp will have a height of 12 in., and the angle between the ramp and the ground will be 17°. To the nearest inch, what will be the length of the ramp?



Example 3: A park ranger whose eye level is 5 ft above the ground measures the angle of elevation to the top of an eruption of Old Faithful geyser to be 34.6°. If the ranger is standing 200 ft from the geyser's base, what is the height of the eruption to the nearest foot?



Trigonometric Ratios of Special Right Triangles

Diagram	Sine	Cosine	Tangent
	sin 30° = sin 60° =	cos 30° = cos 60°	tan 30° = tan 60° =
	sin 45° =	cos 45° =	tan 45° =

Example 4: Use a trigonometric function to find the value of *x*.