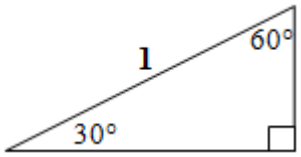
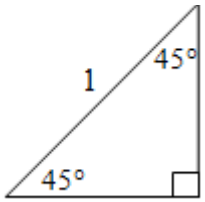
Special Right Triangles

Find the missing sides of the triangles.

30-60-90



45-45-90



Complete the table of values below. You will want to **MEMORIZE** these trig values.

	30°	**45°**	**60°**
$\sin\theta$			
$\cos\theta$			
$\tan\theta$			

Example 1: Answer the following without using a calculator.

a. $\sin 30°$ b. $\tan 45°$ c. $\cos 30°$ d. $\cos 60°$

e. $\cos 45°$ f. $\cot 30°$ g. $\csc 45°$ h. $\sin 60°$

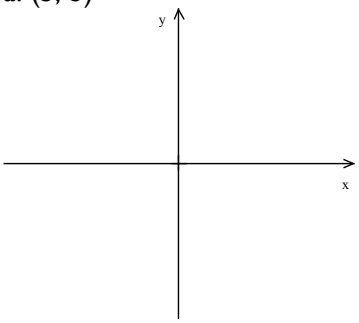
Example 2: Find θ without using a calculator.

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

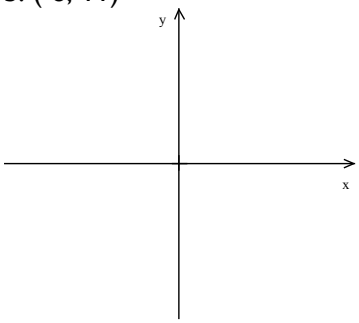
Evaluating Trig Functions Determined by a Point

Let θ be the acute angle in standard position whose terminal side contains the given point. Find the six trigonometric functions of θ.

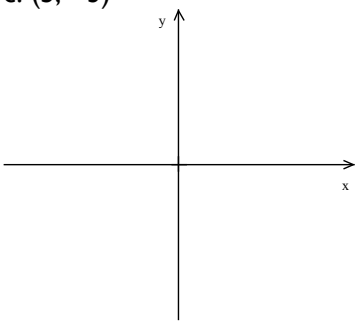
a. (5, 3)



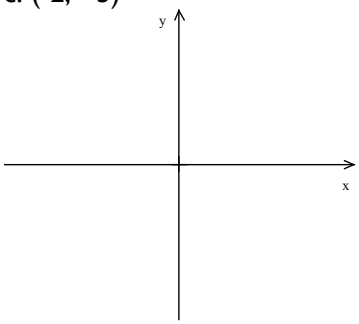
b. (-8, 11)



c. (5, −3)



c. (-2, −5)



Quadrantal Angles: Quadrantal Angles are angles that fall on an axis. To find the trig functions of these angles, we use the ordered pair of the point $(x, y) = (\cos x, \sin x)$ and $\tan x = \dfrac{\sin x}{\cos x} = \dfrac{y}{x}$ This only works on the unit circle (when the radius is 1 unit).

a. $\sin 180°$

b. $\cos 270°$

c. $\tan 90°$

d. $\tan 360°$