Use the given infomation to find the measure of all the anlges θ that meet each condition.

θ in degrees $(0° \le \theta \le 360°)$

1. $\sin\theta = -\frac{\sqrt{3}}{2}$

$\theta = 240°, 300°$

2. $\cos\theta = \frac{1}{2}$ $60°, 300°$

3. $\sin\theta = 0$

$0, 180, 360$

4. $\cos\theta = -\frac{\sqrt{2}}{2}$

$135°, 225°$

Use the given infomation to find the measure of all the anlges θ that meet each condition.

θ in degrees $(0° \le \theta \le 360°)$

1. $\tan\theta = 1$

$\theta = 45, 225°$

y/x = 1 whenever y and x are the exact same coordinates.

2. $\tan\theta = -\frac{\sqrt{3}}{3}$ $\theta = 150°, 330°$

Tan is neg in 2nd and 4th Quad

$-\frac{\sqrt{3}}{3}$ is the simplified version of $\frac{1}{-\sqrt{3}}$

which comes from $\frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}}$ ← x coord must have root 3.

Use the given infomation to find the measure of all the anlges θ that meet each condition.

θ in degrees $(0° \le \theta \le 360°)$

3. $\tan\theta$ is undefined

$90°, 270°$

For y/x to be undefined x must be zero.

4. $\tan\theta = \sqrt{3}$

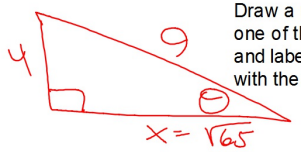
$\frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}}$ ← y-coord must hav root 3.

$60°, 240°$

Since Tan is positive θ must be in the 1st and 3rd Quad.

Given $\sin\theta = \frac{4}{9}$ and $180° \le \theta \le 270°$ find the value of Cosθ and Tanθ

3rd Quadrant



Draw a right triangle, label one of the acute angles θ and label the opposite leg 4 with the Hypotenuse = 9.

Use Pythagorean Theorem to find the Adjacent Leg:

$4^2 + x^2 = 9^2$

$x^2 = 65$

$x = \sqrt{65}$

$\cos\theta = -\frac{\sqrt{65}}{9}$ Cos is neg in the 3rd Quad.

$\tan\theta = \frac{4}{\sqrt{65}} = \frac{4\sqrt{65}}{65}$ Tan is pos in the 3rd Quad

a. Given $Cos\theta > 0$ and $Sin\theta = -\frac{1}{2}$ find θ

θ must be in the 4th Quadrant for Cos to be pos and Sin to be neg.
For Sinθ = -1/2 θ must be 330°

b. Find Cosθ

Since θ = 330° Cosθ = $\frac{\sqrt{3}}{2}$

Given $90° \leq \theta \leq 180°$

If $Cos\theta = -\frac{\sqrt{3}}{2}$ find $Sin\theta$ = $\frac{1}{2}$

θ must be 150° to be between 90° and 180°
and for Cosθ to have the given value.

therefore Sinθ = 1/2