

6.4 exact values

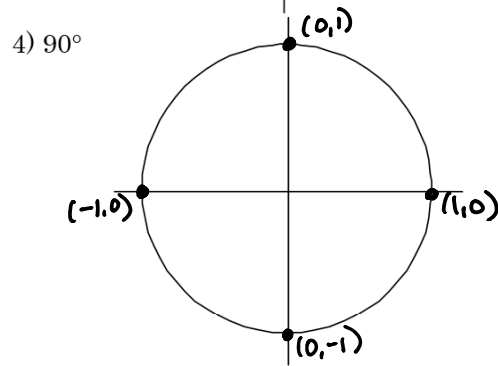
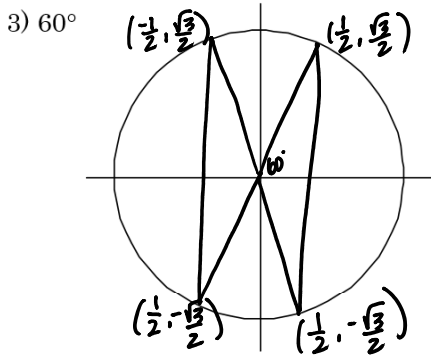
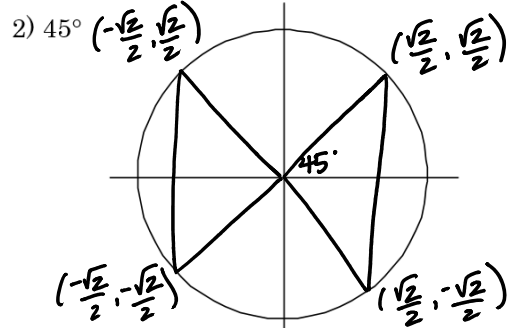
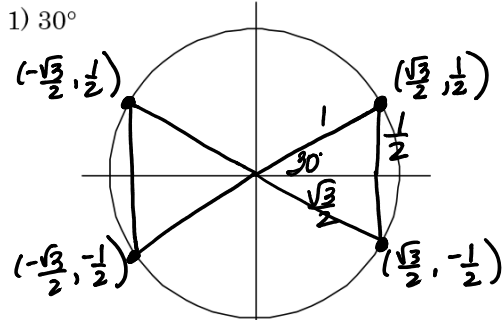
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A series of horizontal blue lines for writing, with a vertical red margin line on the left side.

Algebra 2 Trig Honors
 Sect 6.4 Unit Circle in Degrees Notes

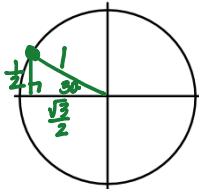
Name: _____

For #1-4, make careful drawings on the **unit circle** (a circle with a radius of $\underline{1}$) to serve as a reference for later work! Draw the four rotations that use the given reference angle. Label each terminal point with its coordinates. Write the rotation measure next to each terminal point. Draw the reference Δ s.

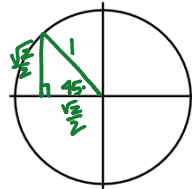


Sketch the segment on the **unit circle**. Use a 30-60-90 or 45-45-90 triangle to find the exact value of the trig expression. Mark the reference angle with its measure. Remember that the radius is 1.

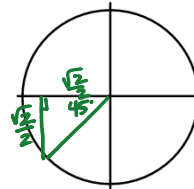
1) $\cos 150^\circ = -\frac{\sqrt{3}}{2}$



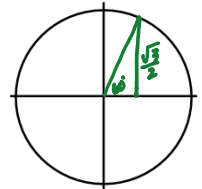
2) $\sin 135^\circ = \frac{\sqrt{2}}{2}$



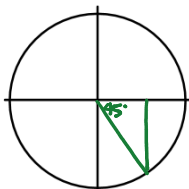
3) $\tan 225^\circ = 1$



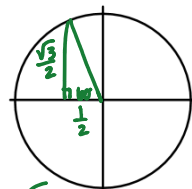
4) $\sin 420^\circ = \frac{\sqrt{2}}{2}$



5) $\cos 315^\circ = \frac{\sqrt{2}}{2}$

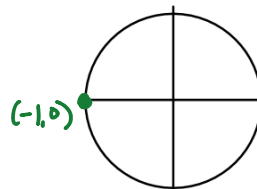


6) $\tan (-240^\circ) = -\sqrt{3}$

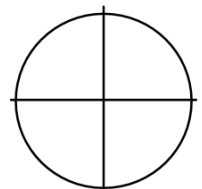


$$\frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{\sqrt{3}}{2} \cdot \frac{2}{1} = \sqrt{3}$$

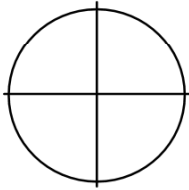
7) $\sin 180^\circ = 0$



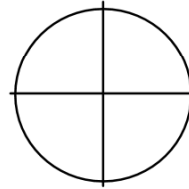
8) $\cos (-270^\circ)$



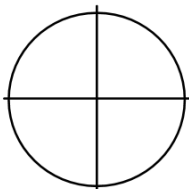
9. If $\sin \theta = \frac{\sqrt{2}}{2}$ and θ is in Quadrant II, find a θ and $\cos \theta$.



10. If $\cos \theta = -\frac{\sqrt{3}}{2}$ and θ is in Quadrant III, find a θ and $\sin \theta$.



11. If $\cos \theta = \frac{\sqrt{2}}{2}$ and $\sin \theta < 0$, find a θ and $\tan \theta$.



12. If $\sin \theta = -\frac{\sqrt{3}}{2}$ and $\cos \theta < 0$ find a θ and $\cot \theta$.

