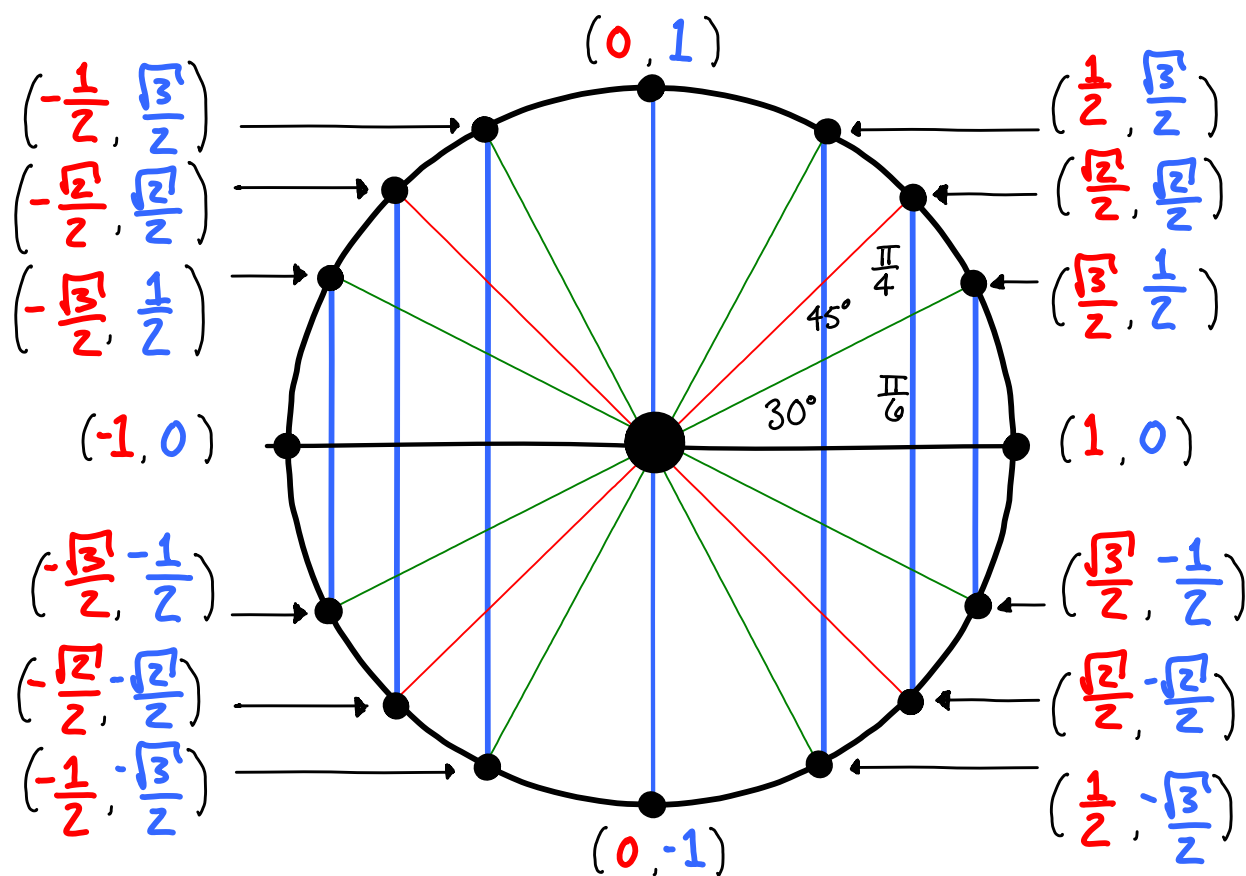
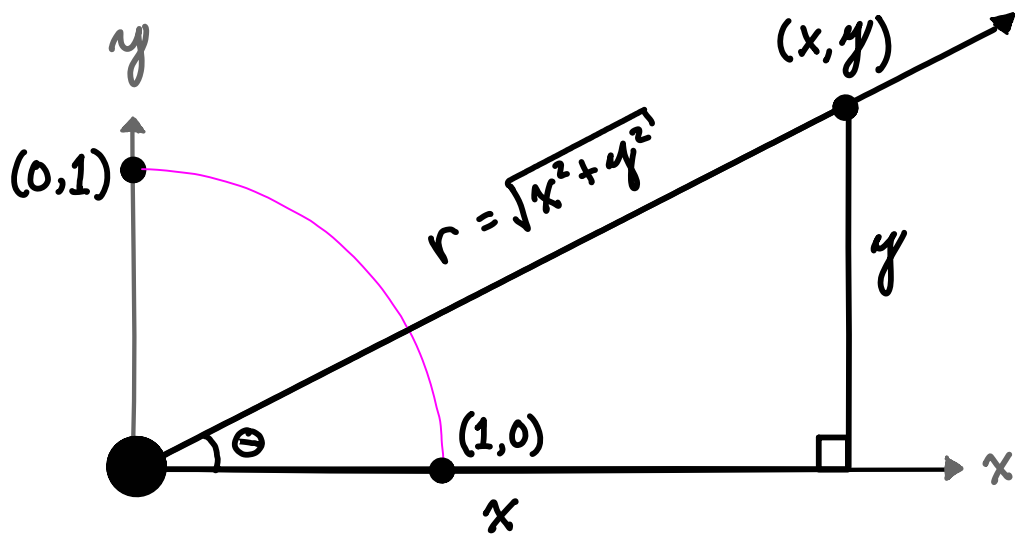


# EVALUATING TRIG WITH THE UNIT CIRCLE

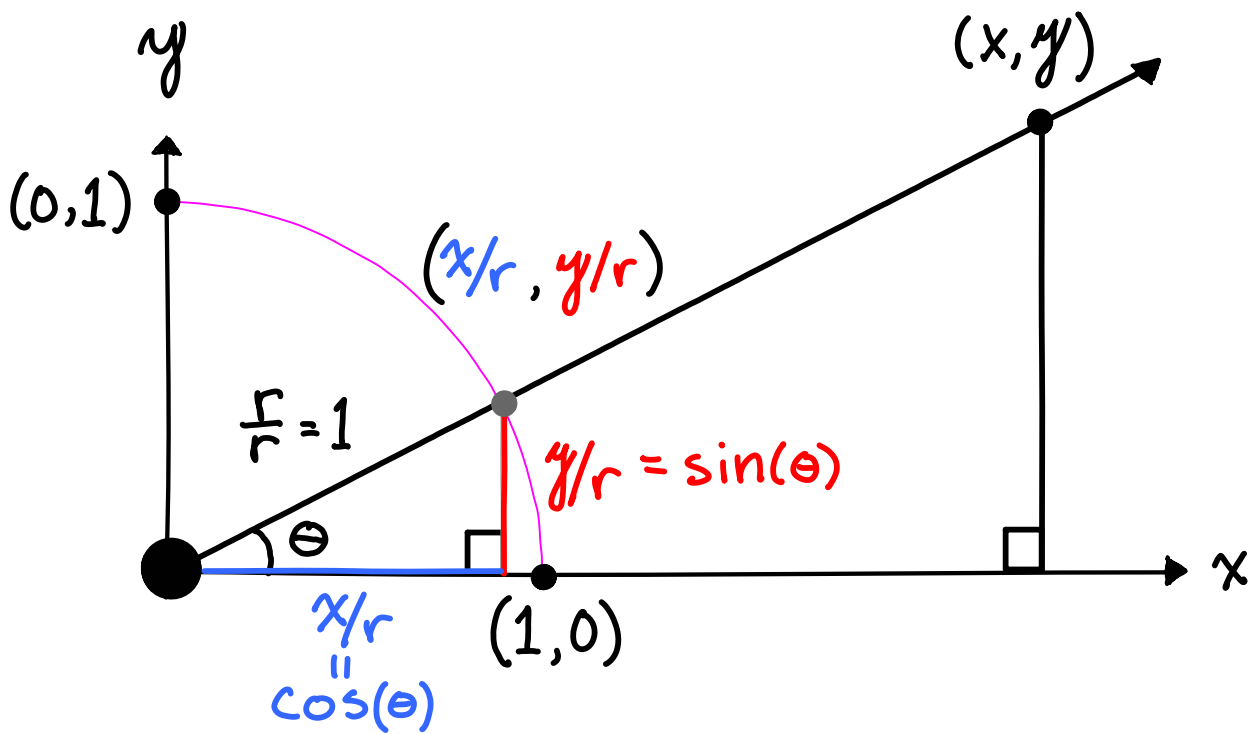


$$\cos(\theta) = 1 - \frac{\theta^2}{2 \cdot 1} + \frac{\theta^4}{4 \cdot 3 \cdot 2 \cdot 1} - \dots = \sum_{n=0}^{\infty} (-1)^n \frac{\theta^{2n}}{(2n)!}$$

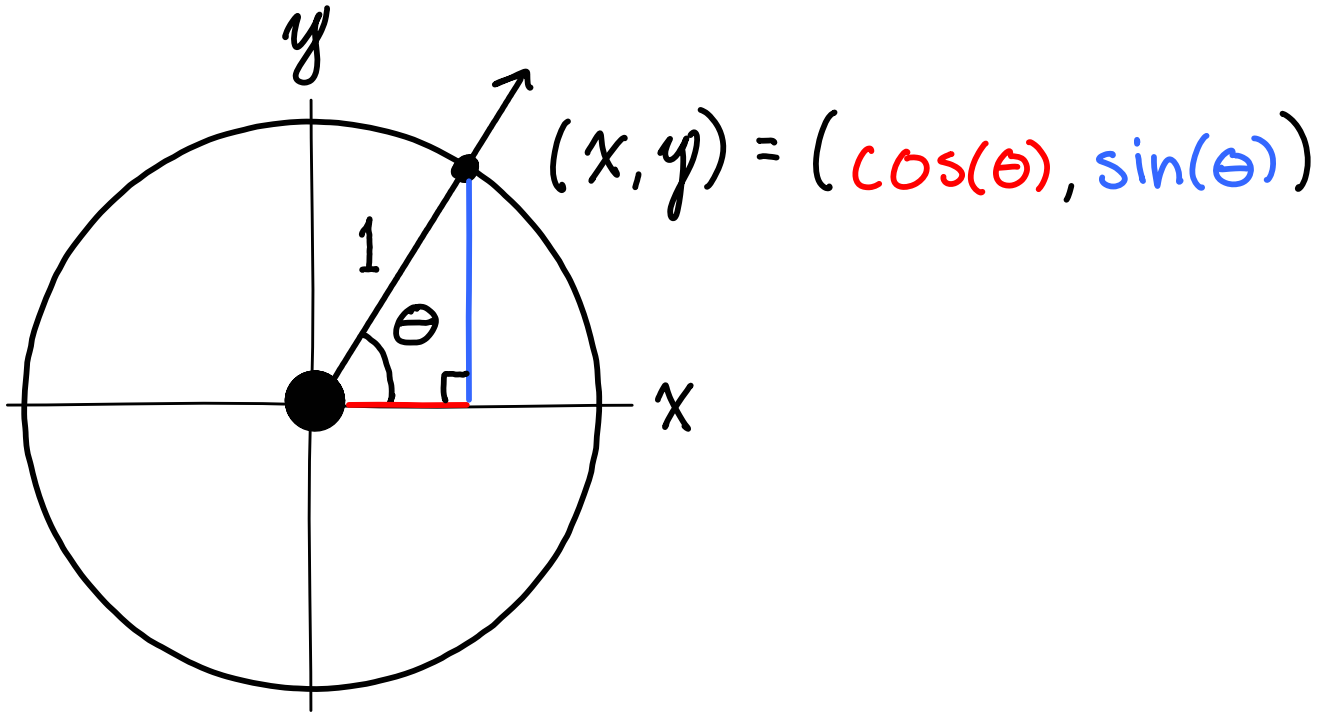
$$\sin(\theta) = \theta - \frac{\theta^3}{3!} + \frac{\theta^5}{5!} - \dots = \sum_{n=0}^{\infty} (-1)^n \frac{\theta^{2n+1}}{(2n+1)!}$$

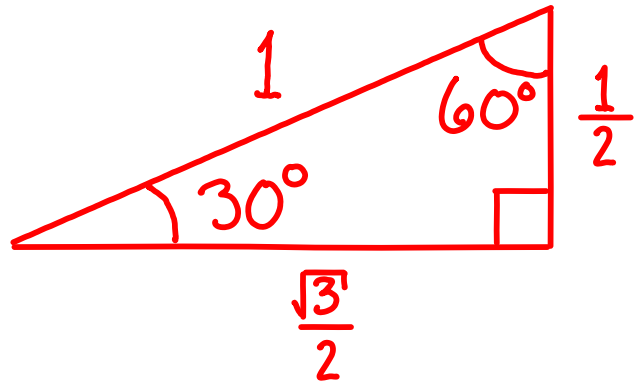
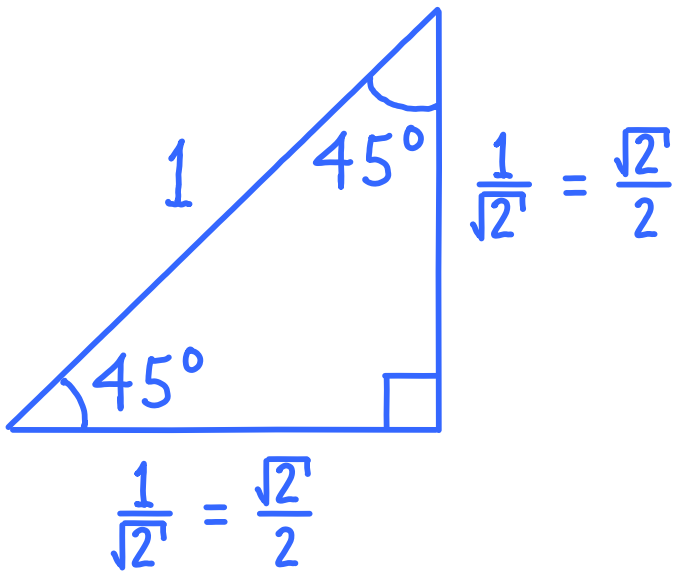


$\cos(\theta) := x/r$   
 $\sin(\theta) := y/r$



$$r=1 \Rightarrow \begin{cases} x/r = x/1 = x & \Rightarrow \cos(\theta) = x \\ y/r = y/1 = y & \Rightarrow \sin(\theta) = y \end{cases}$$



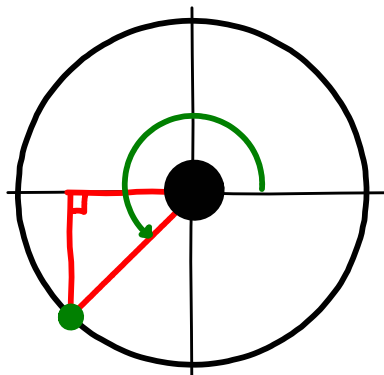
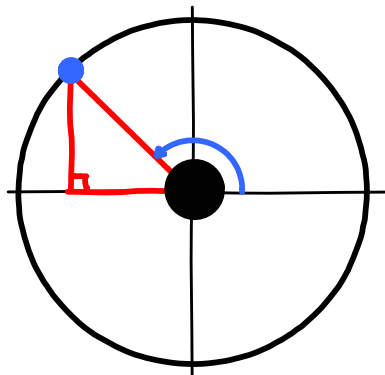
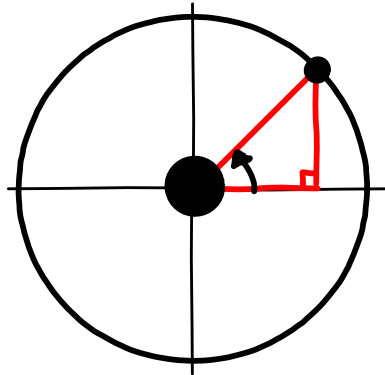


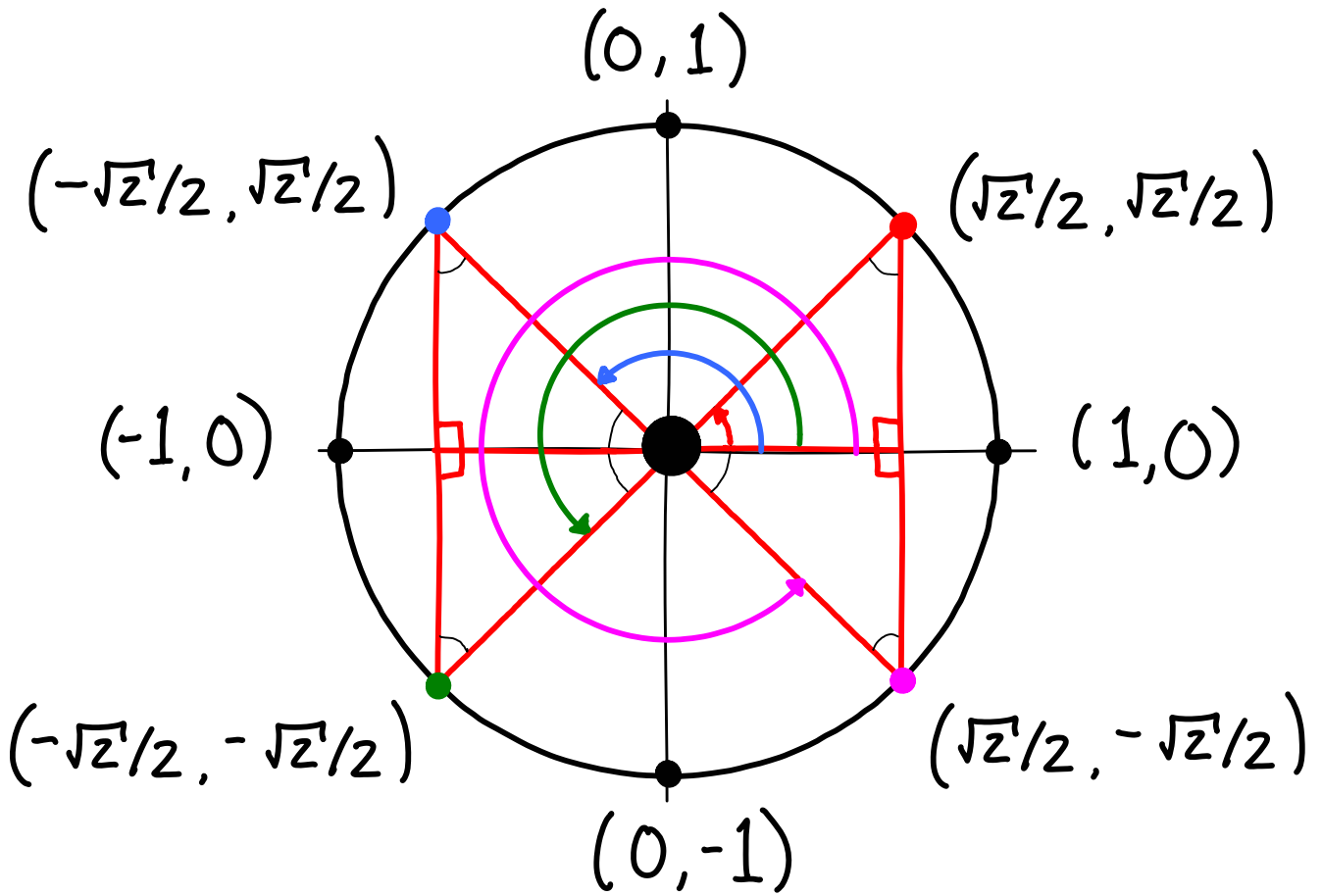
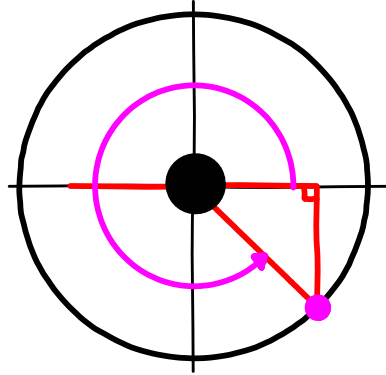
### THE IMPORTANT NUMBERS

$$\left\{ \frac{1}{2}, \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}, \frac{\sqrt{3}}{2} \right\} \text{ OR } \left\{ \frac{\sqrt{1}}{2}, \frac{\sqrt{2}}{2}, \frac{\sqrt{3}}{2} \right\}$$

# THE $45^\circ$ TRIANGLE AND THE UNIT CIRCLE

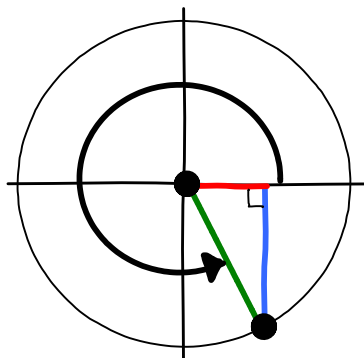
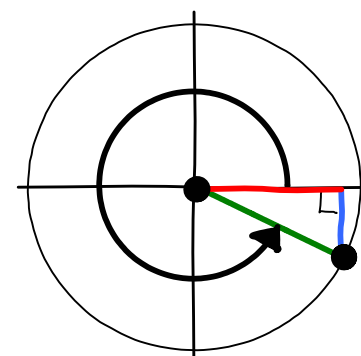
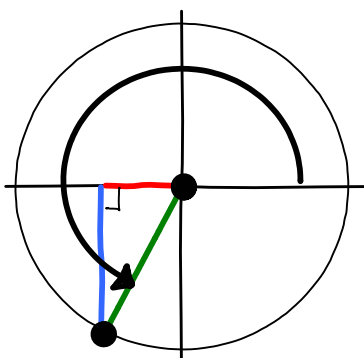
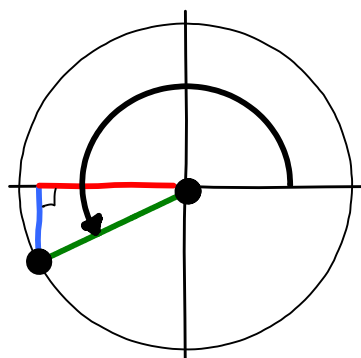
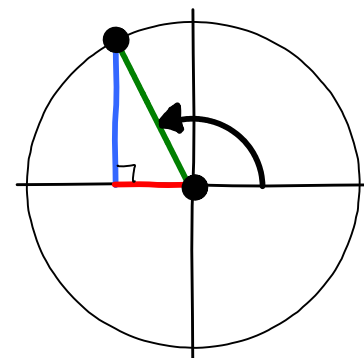
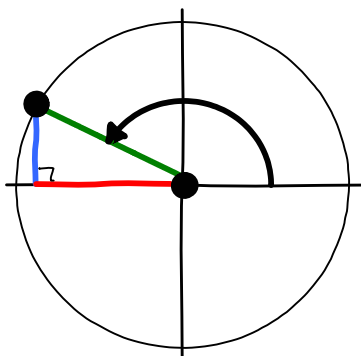
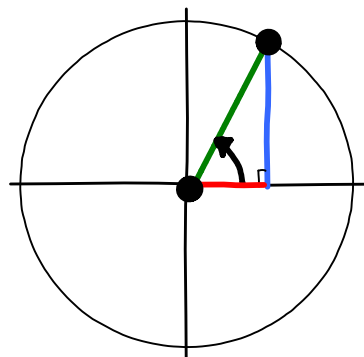
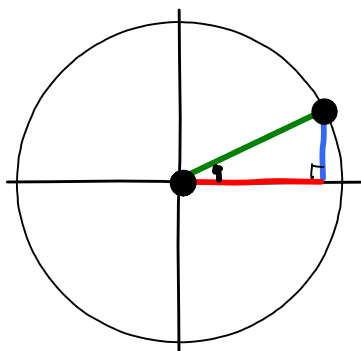
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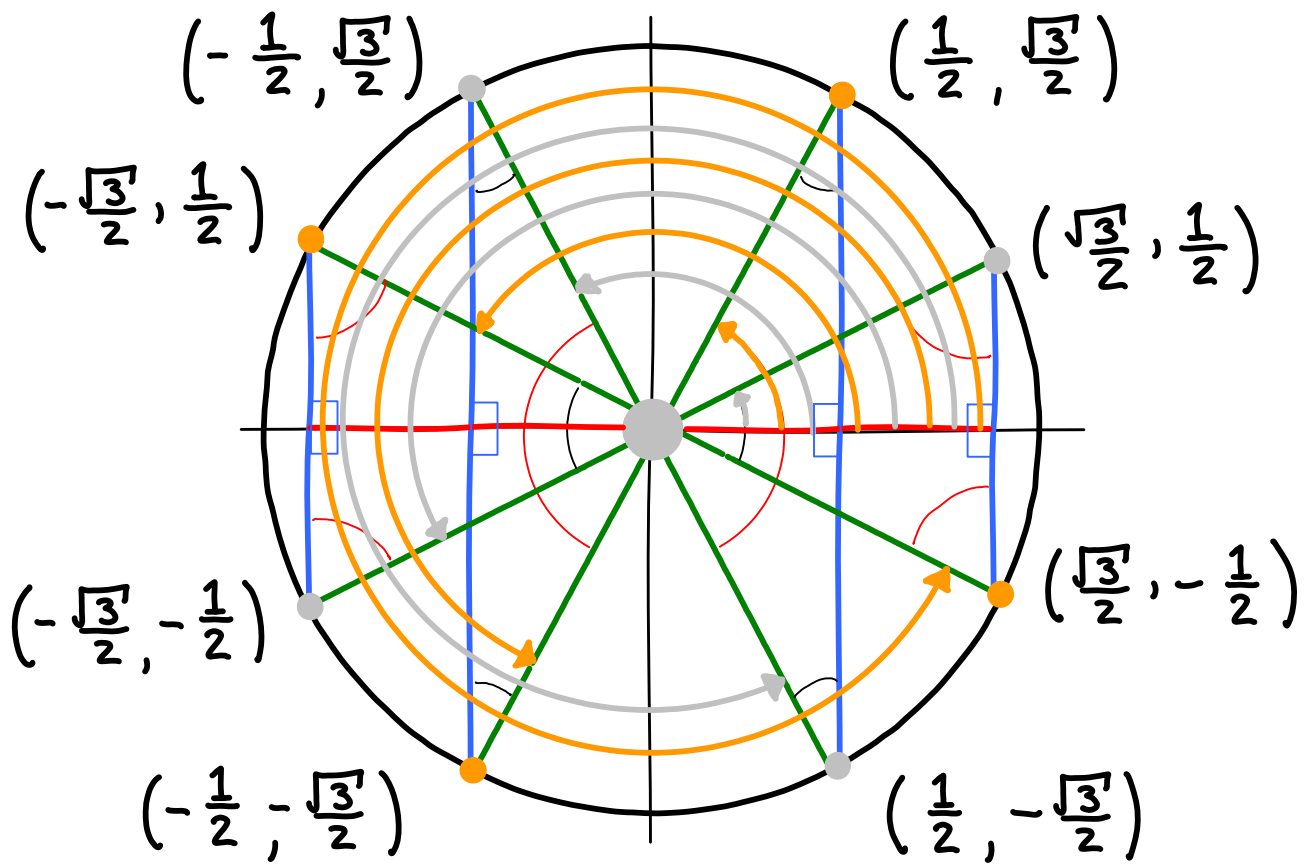


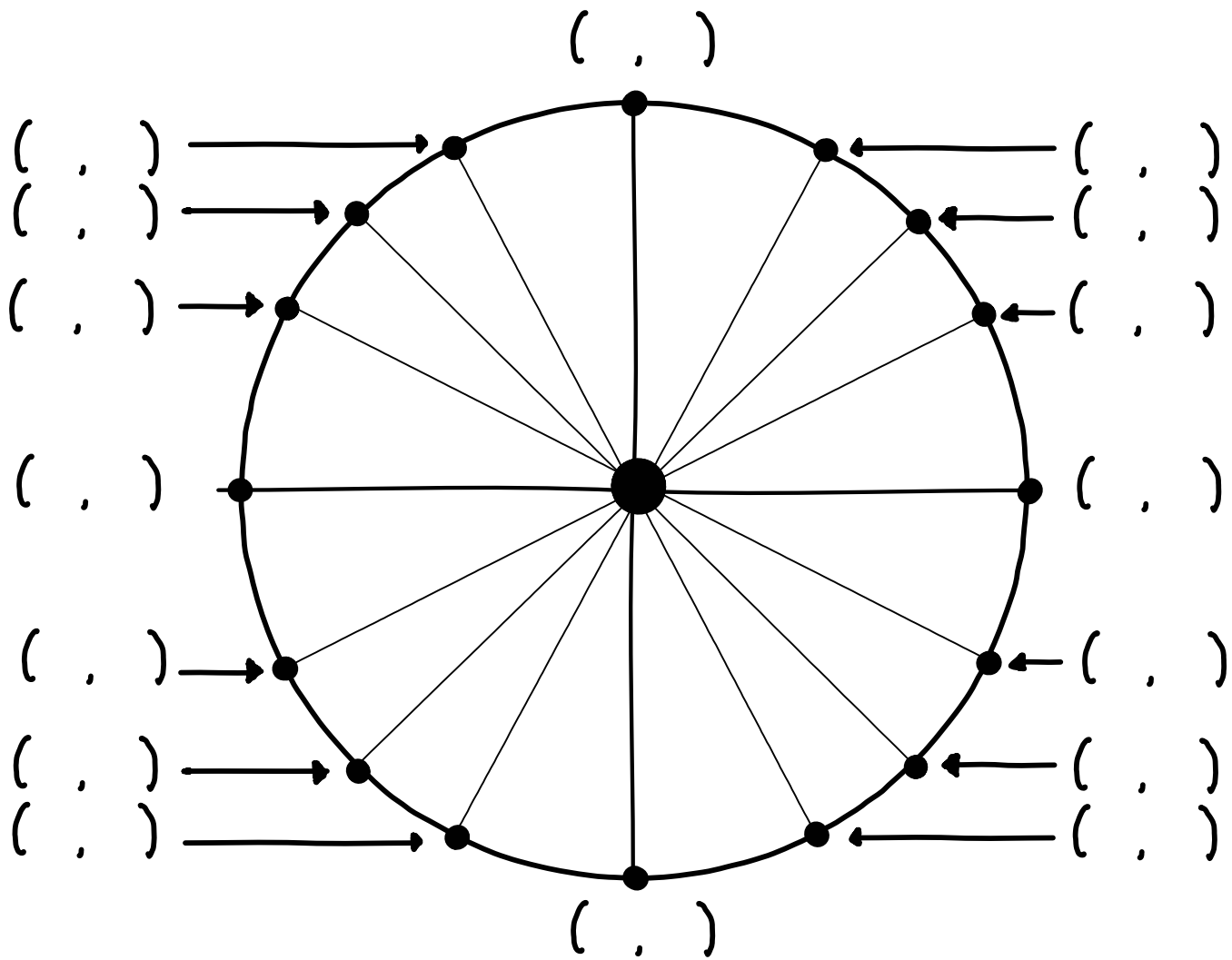


# THE $30^\circ/60^\circ$ TRIANGLE AND THE UNIT CIRCLE

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# EXAMPLES

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Find the exact value of  
 $\cos(2^\circ) + \cos(4^\circ) + \cos(6^\circ) + \dots + \cos(358^\circ)$

