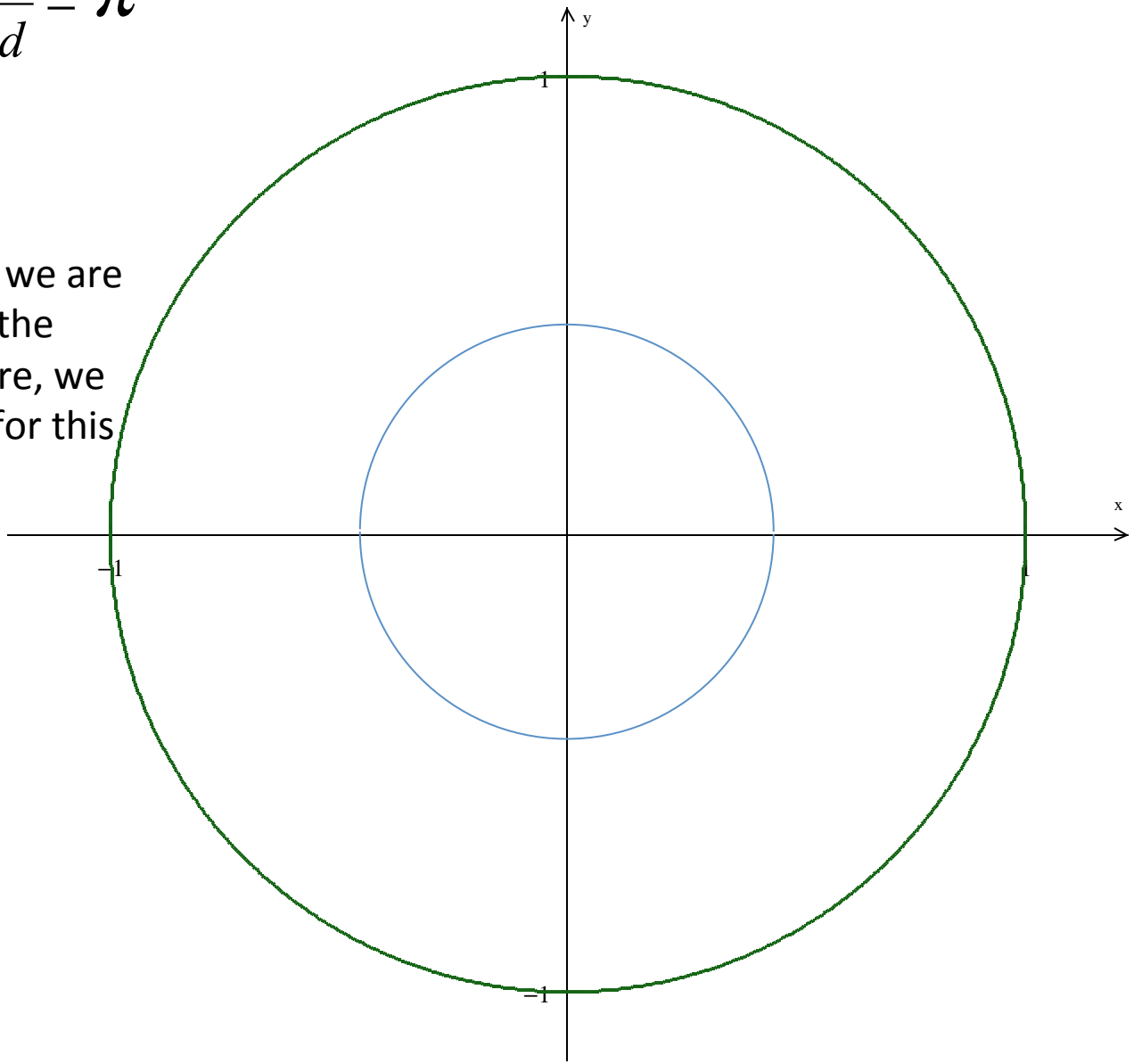
Remember: $\frac{C}{d} = \pi$

$C = 2\pi r$

And because we are dealing with the unit circle here, we can say that for this special case,

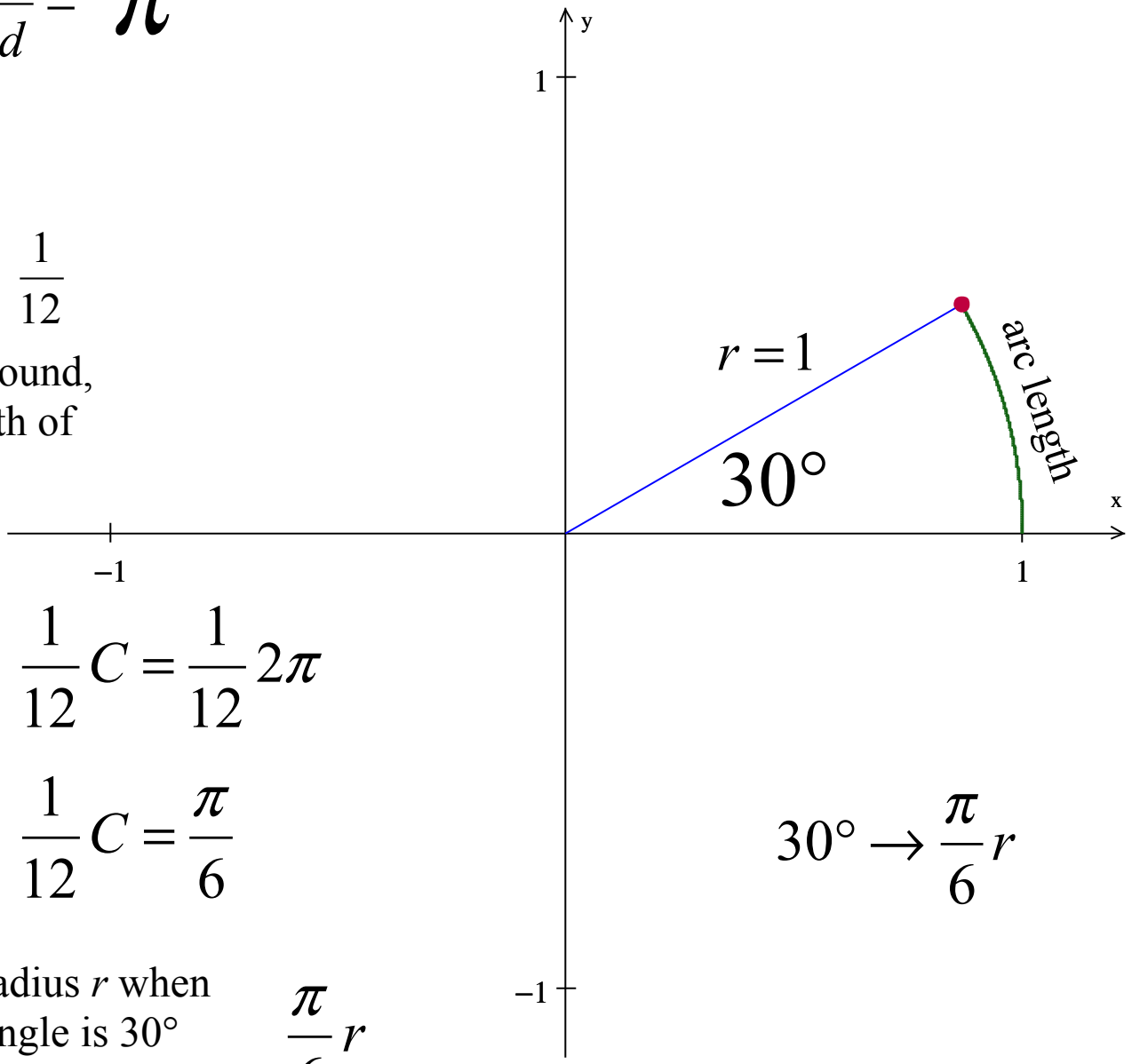
$C = 2\pi$



Remember: $\frac{C}{d} = \pi$

$C = 2\pi$

Since 30° is $\frac{1}{12}$ of the way around, then the length of this arc is



arc length = $\frac{1}{12}C = \frac{1}{12}2\pi$

$\frac{1}{12}C = \frac{\pi}{6}$

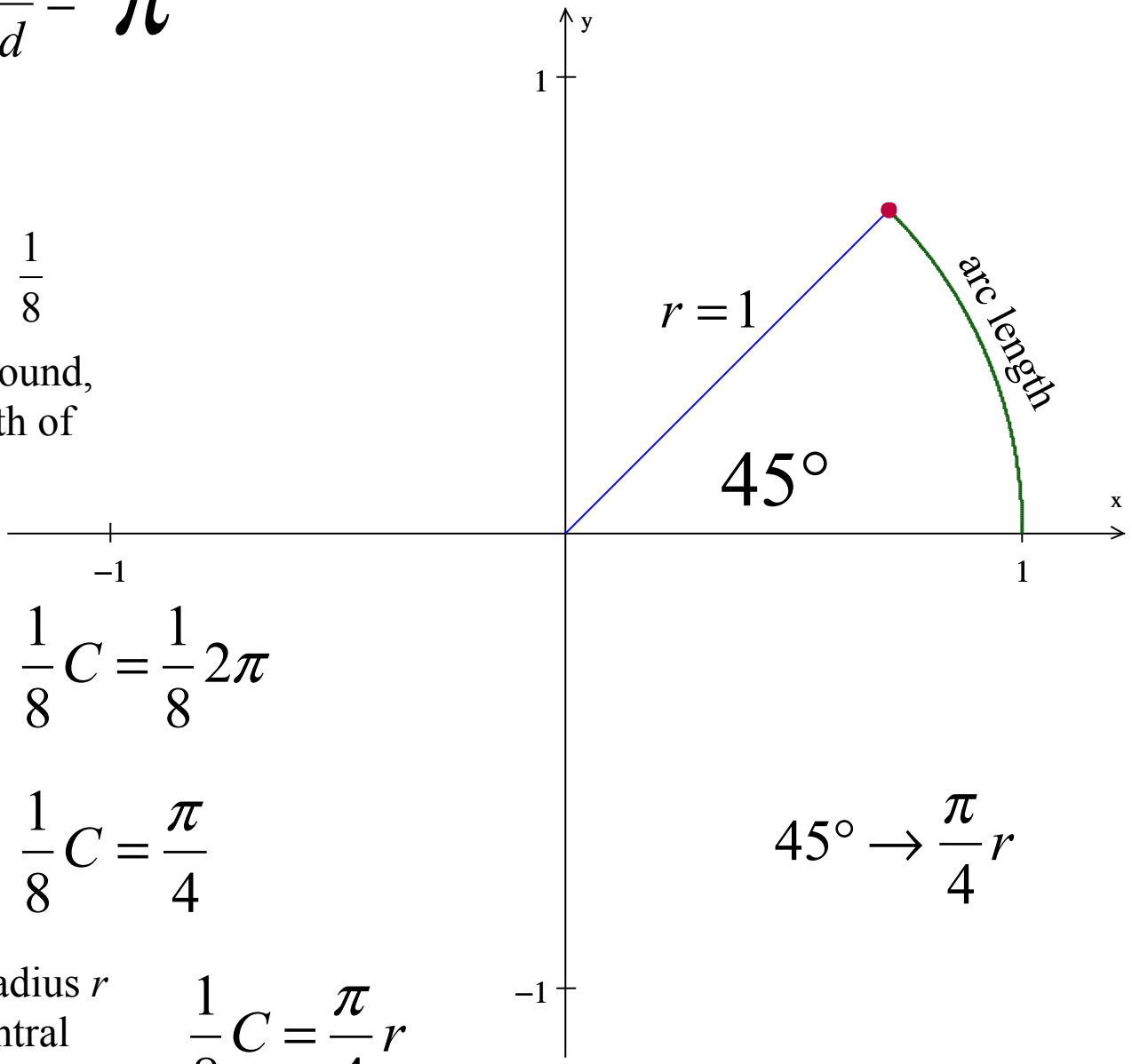
$30° \rightarrow \frac{\pi}{6}r$

So for any radius r when the central angle is 30° the length of the arc is… $\frac{\pi}{6}r$

Remember: $\frac{C}{d} = \pi$

$C = 2\pi$

Since 45 is $\frac{1}{8}$ of the way around, then the length of this arc is



arc length = $\frac{1}{8}C = \frac{1}{8}2\pi$

$\frac{1}{8}C = \frac{\pi}{4}$

$45° \rightarrow \frac{\pi}{4}r$

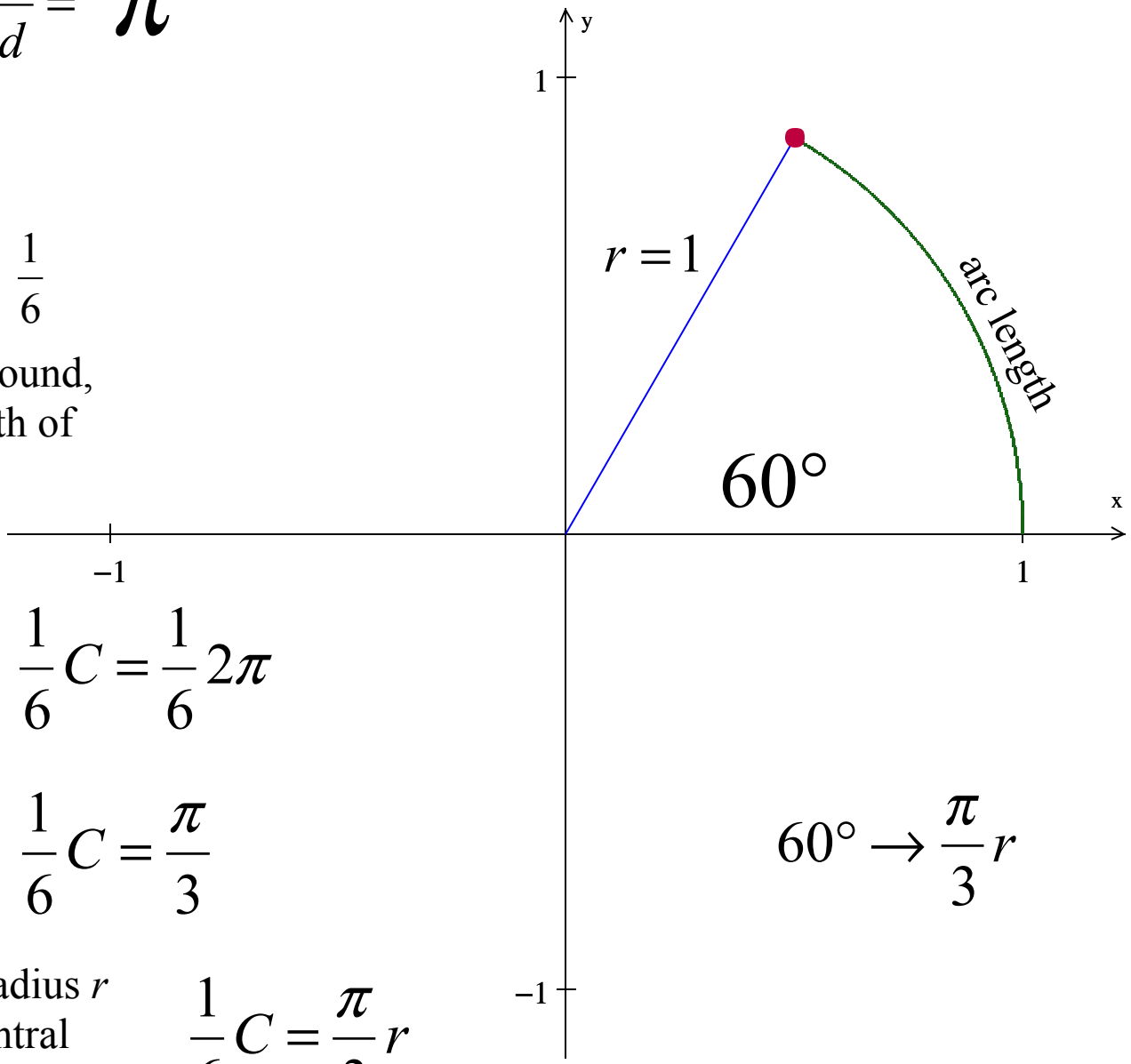
So for any radius r when the central angle is 45

$\frac{1}{8}C = \frac{\pi}{4}r$

Remember: $\frac{C}{d} = \pi$

$C = 2\pi$

Since 60 is $\frac{1}{6}$ of the way around, then the length of this arc is



arc length = $\frac{1}{6}C = \frac{1}{6}2\pi$

$\frac{1}{6}C = \frac{\pi}{3}$

$60° \rightarrow \frac{\pi}{3}r$

So for any radius r when the central angle is 60

$\frac{1}{6}C = \frac{\pi}{3}r$

$30° \rightarrow \frac{\pi}{6} r$

$45° \rightarrow \frac{\pi}{4} r$

$60° \rightarrow \frac{\pi}{3} r$

$\theta°$	$0°$	$30°$	$45°$	$60°$	$90°$
θ^{rad}	0^{rad}	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$
$\sin\theta$					
$\cos\theta$					

Converting degrees to radians

Multiply by $\frac{\pi}{180}$

Converting radians to degrees

Multiply by $\frac{180}{\pi}$