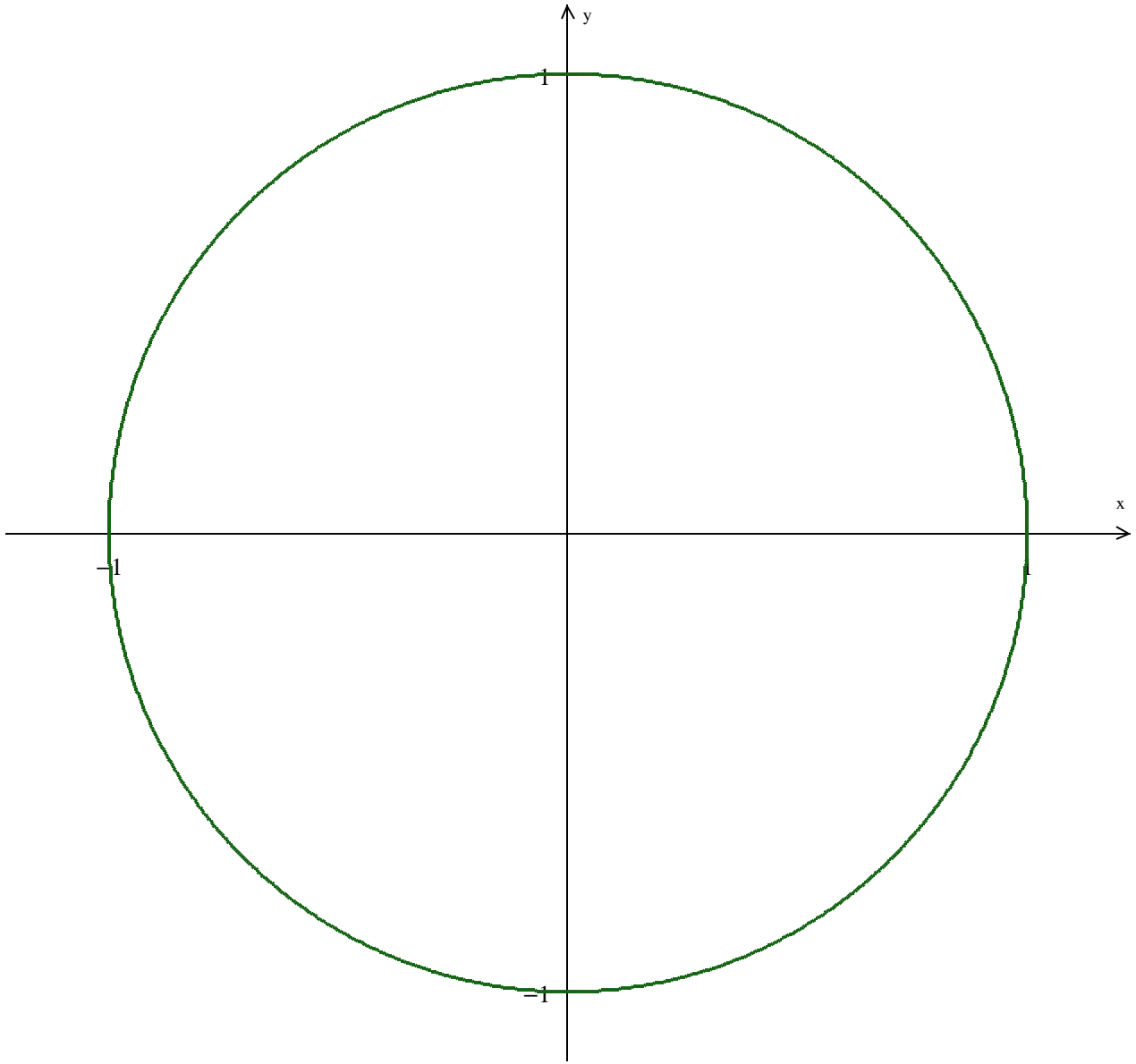
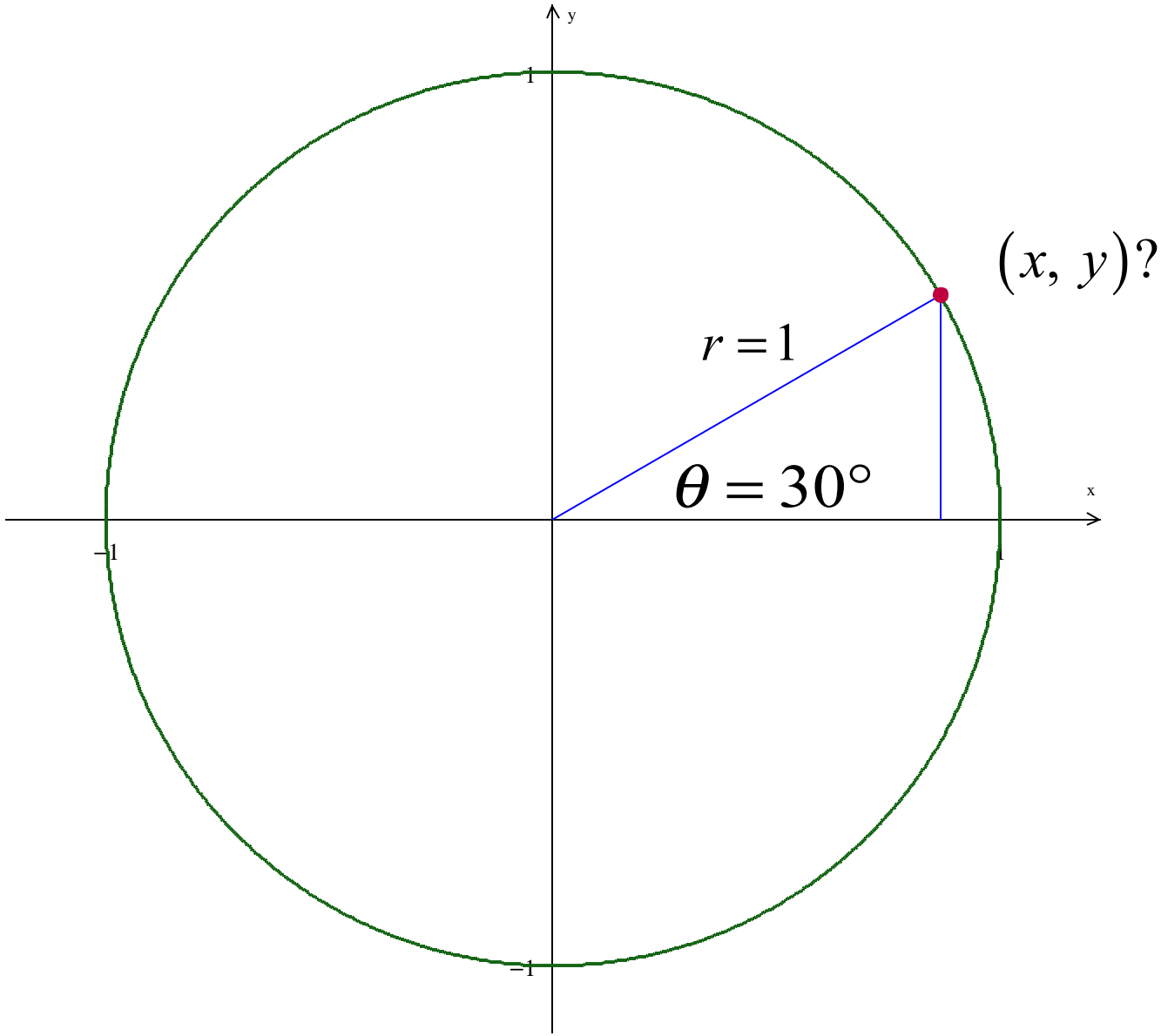
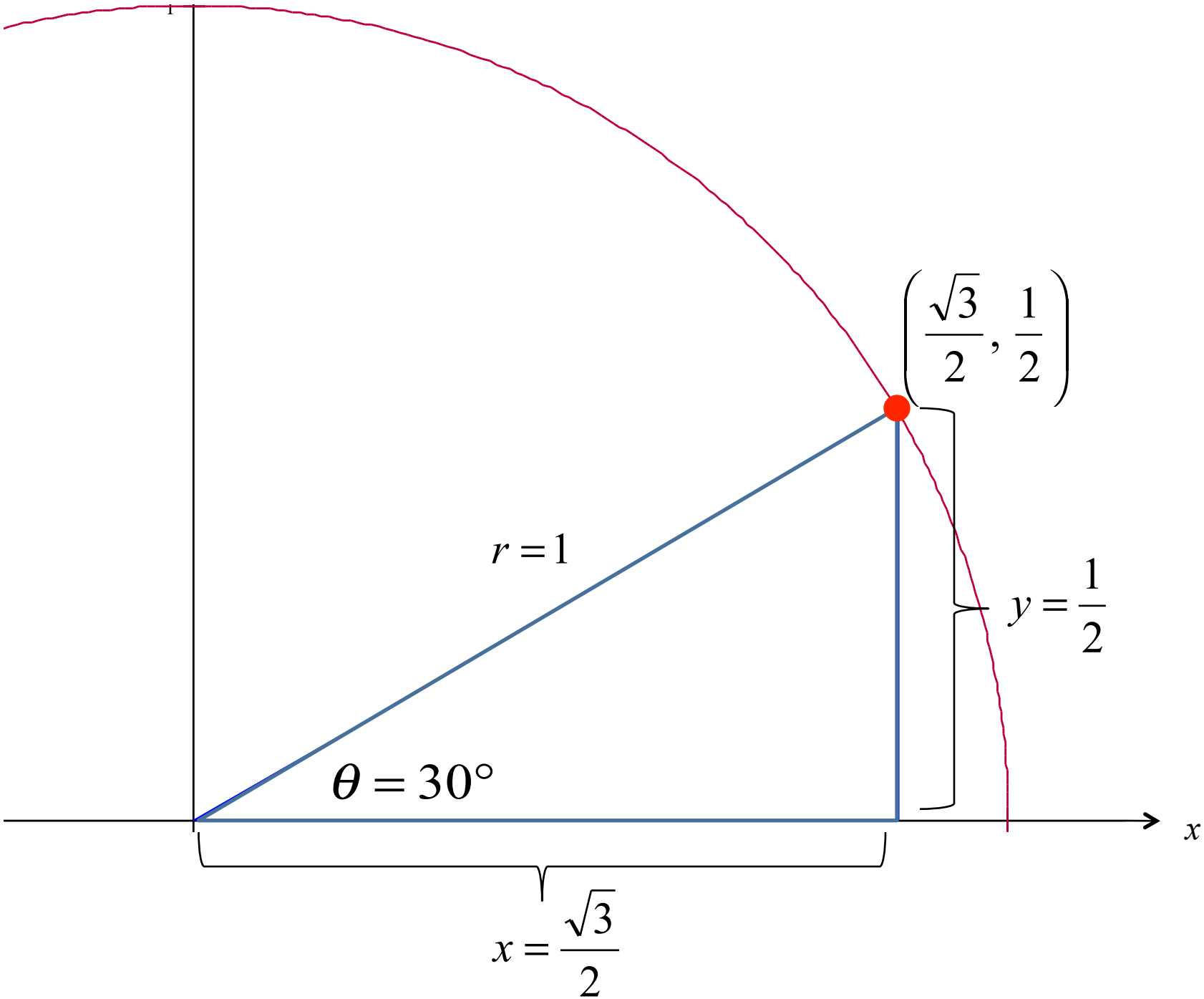
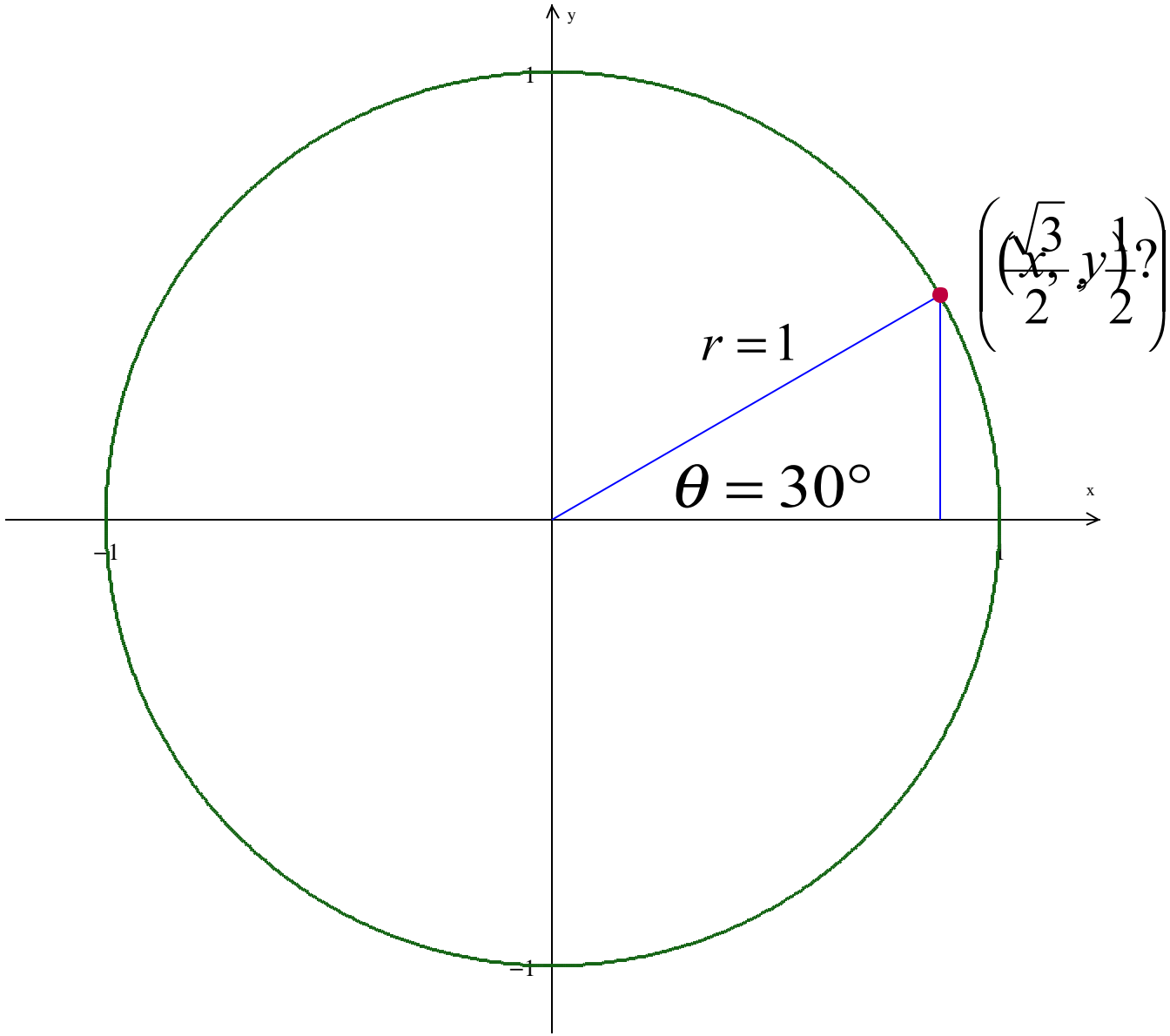
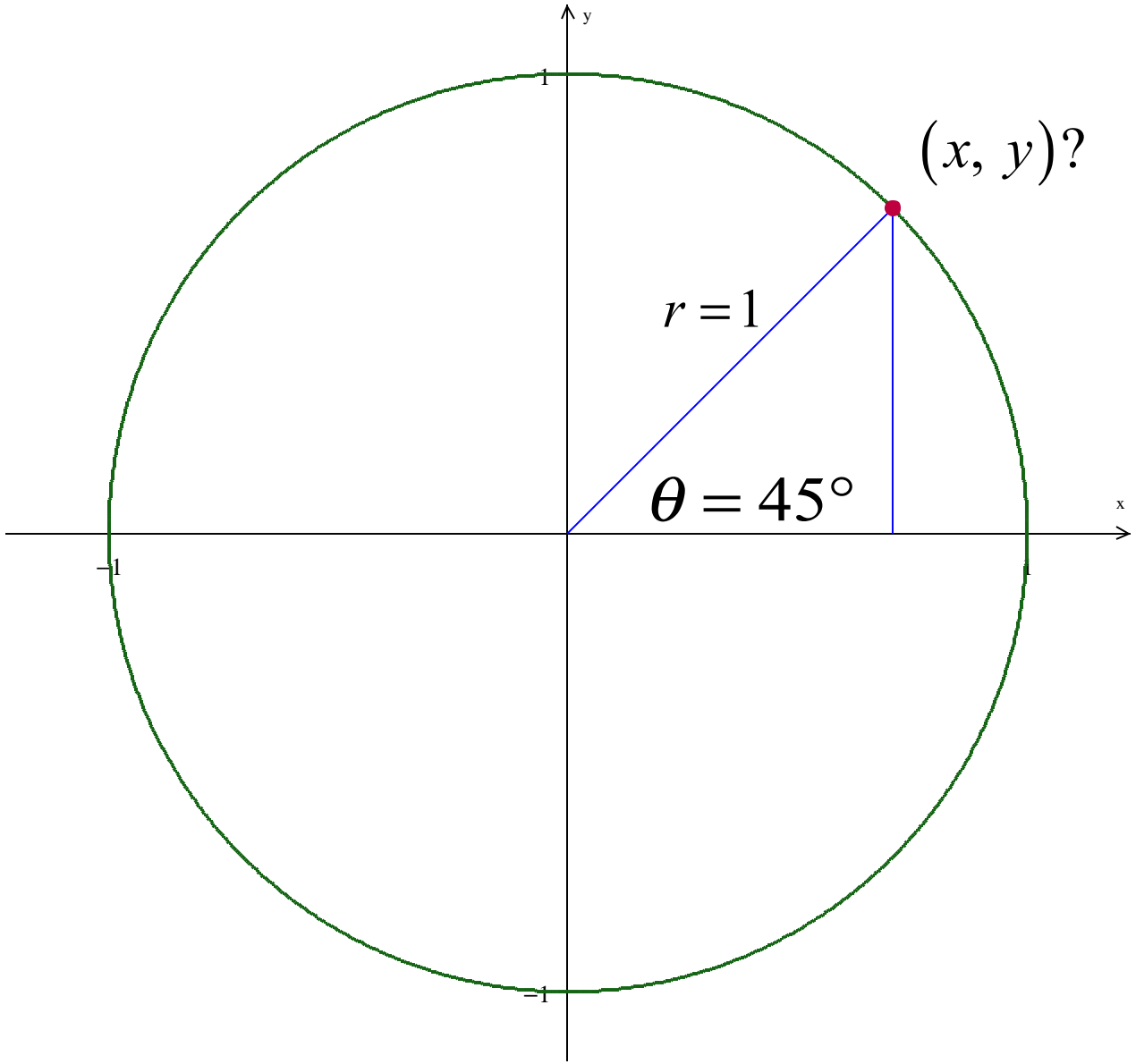

y
1
x
−1
1
−1


y
1
(x, y)?
$r = 1$
$\theta = 30°$
x
−1
1
−1


1
$\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$
$r = 1$
$y = \frac{1}{2}$
$\theta = 30°$
x
$x = \frac{\sqrt{3}}{2}$


y
1
$\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$
(x, y)?
$r = 1$
$\theta = 30°$
x
−1
1
−1


y
1
(x, y)?
$r = 1$
$\theta = 45°$
x
−1
1
−1

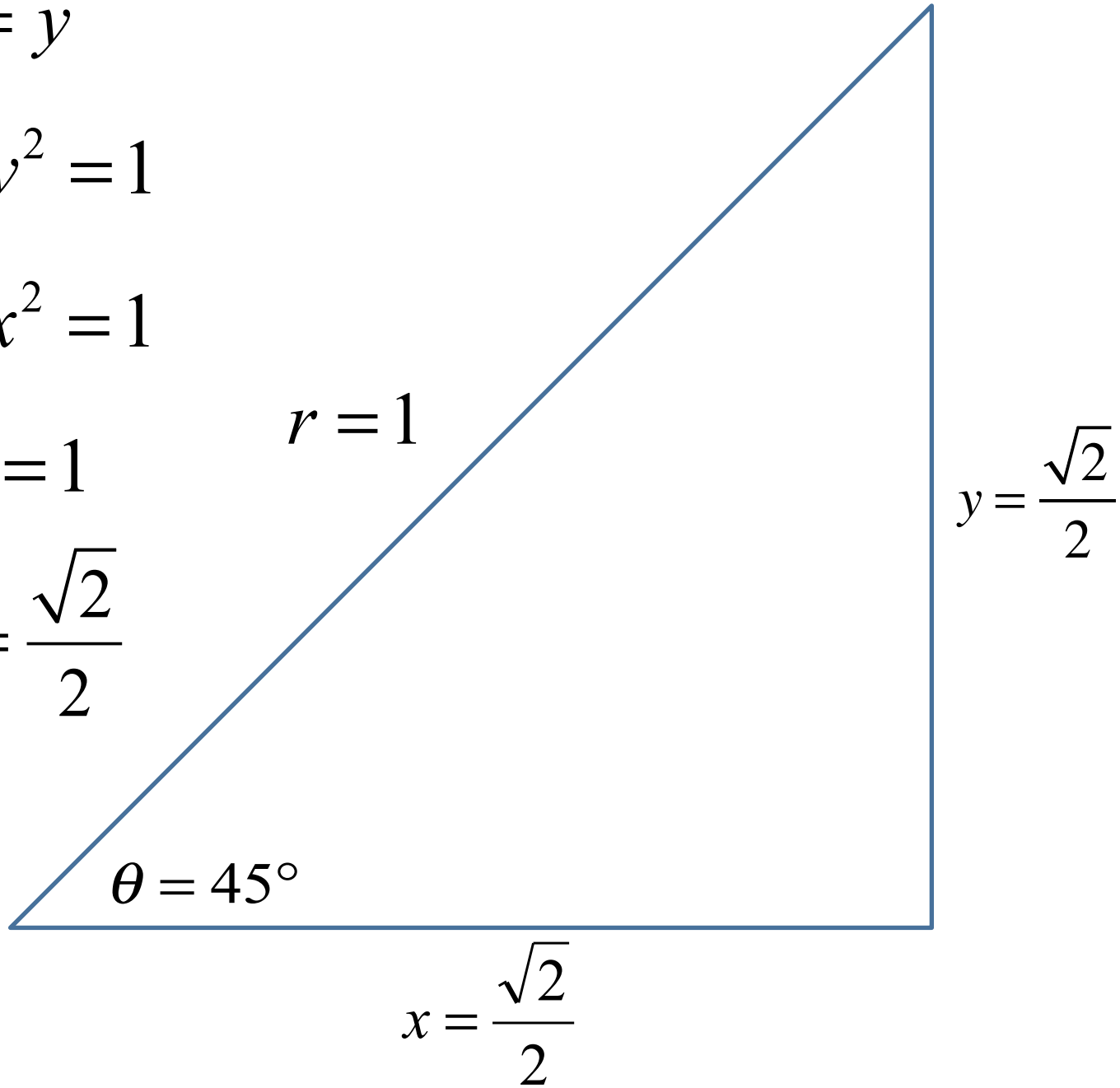
$$x = y$$

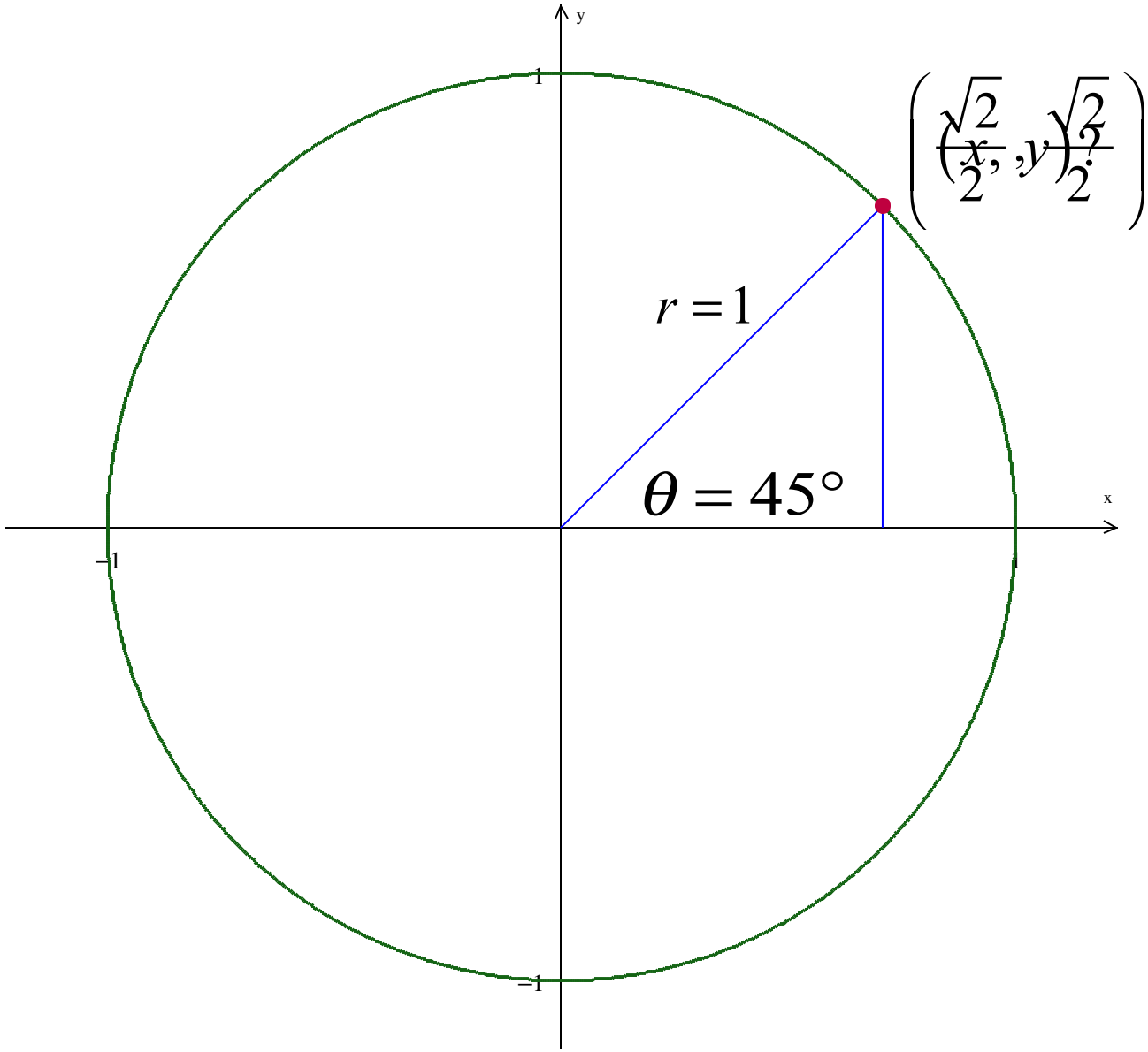
$$x^2 + y^2 = 1$$

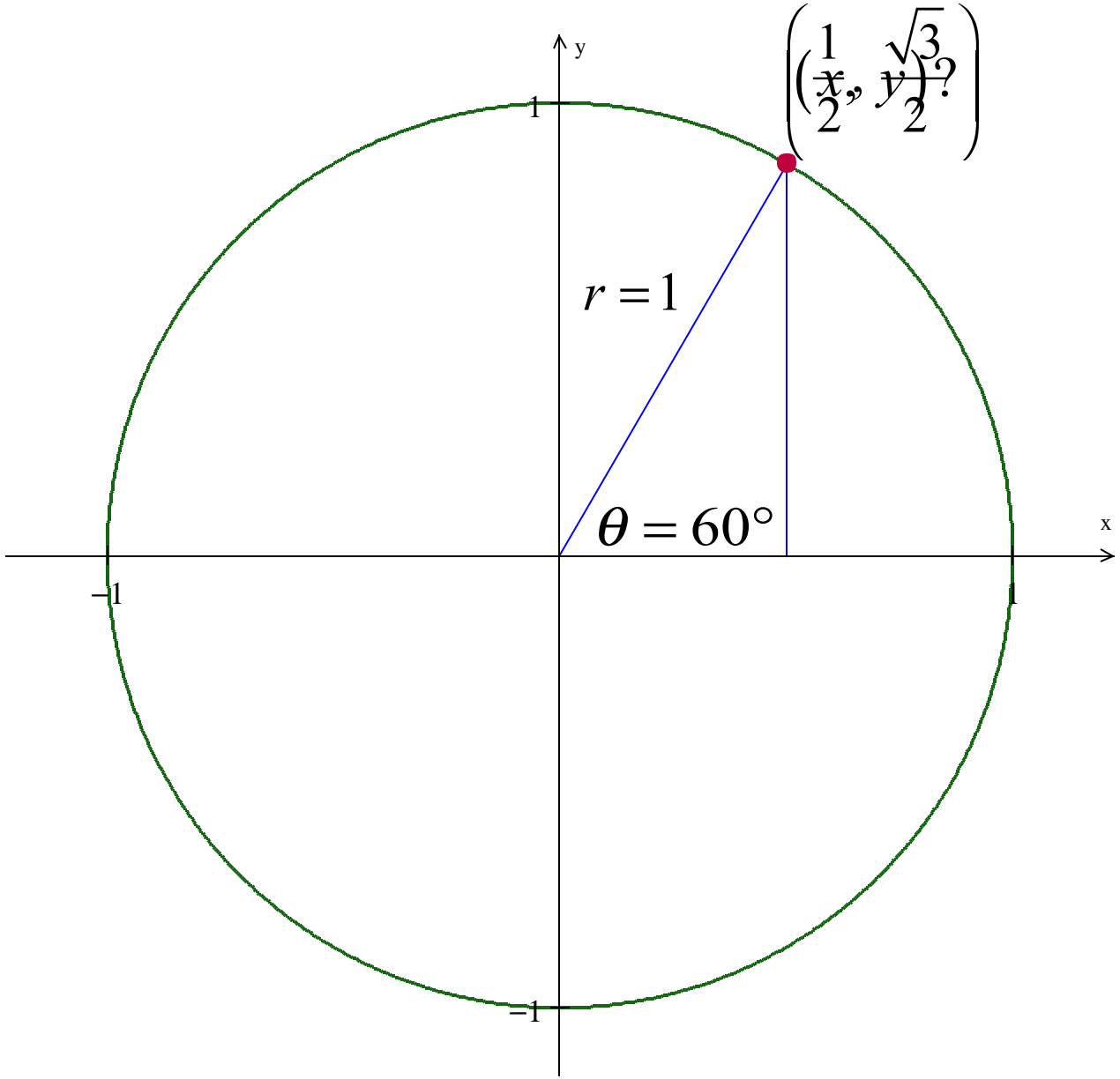
$$x^2 + x^2 = 1$$

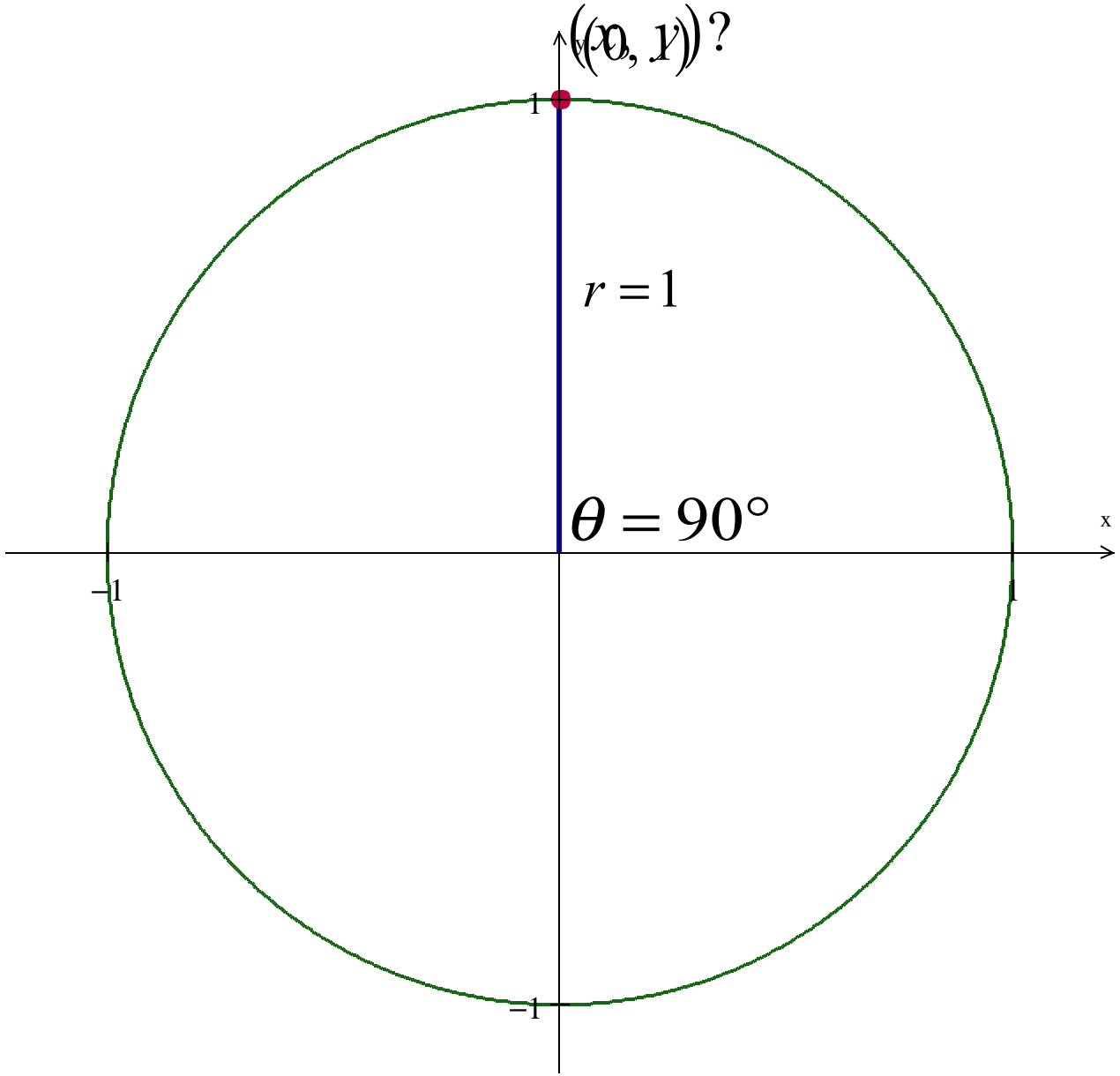
$$2x^2 = 1$$

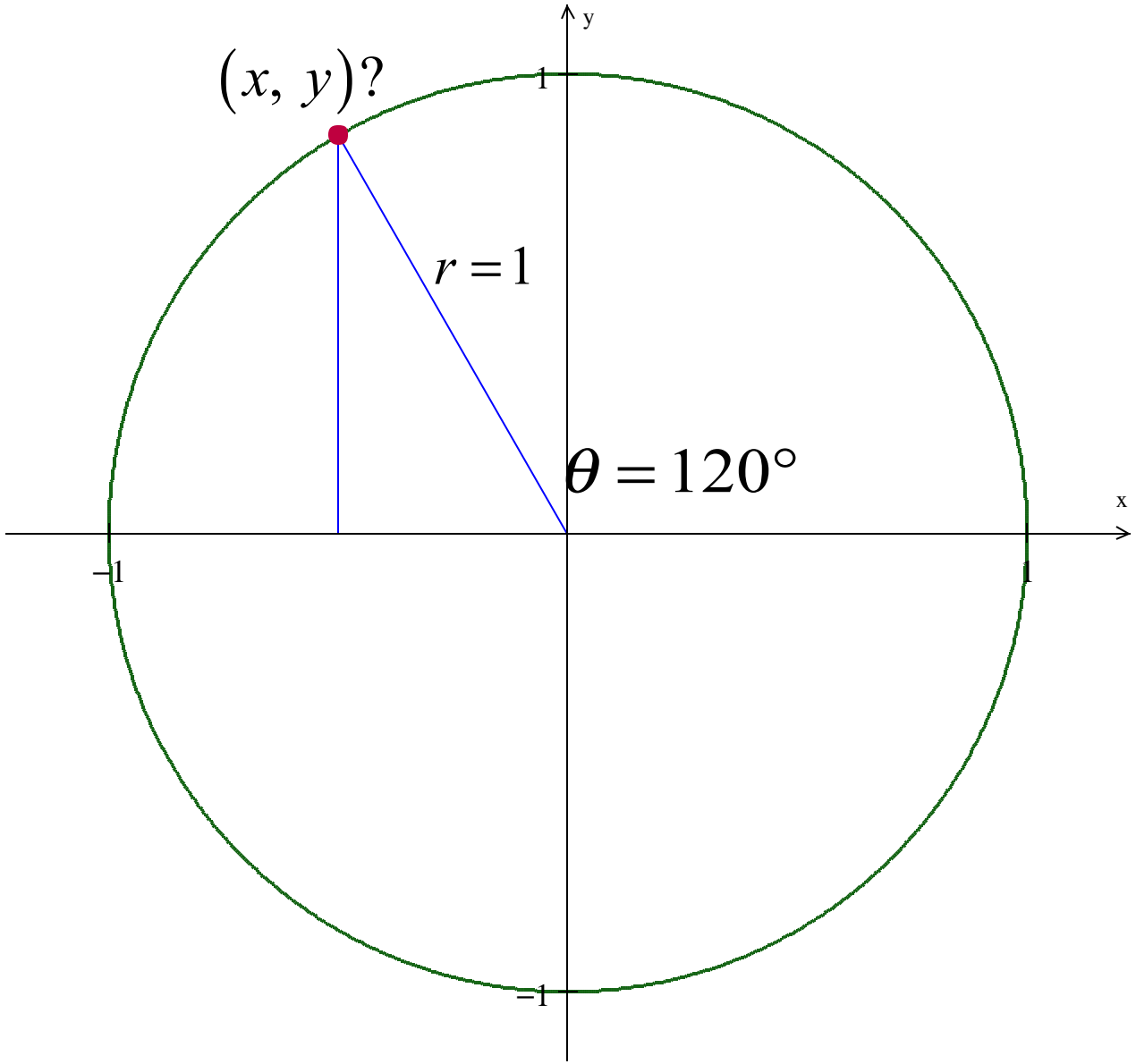
$$x = y = \frac{\sqrt{2}}{2}$$




y
1
$(x, y) = \left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$
$r = 1$
$\theta = 45°$
x
−1
1
−1


$\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$
(x, y)?
y
x
1
−1
1
−1
$r = 1$
$\theta = 60°$


$((x, y))$?
1
$r = 1$
$\theta = 90°$
x
−1
1
−1

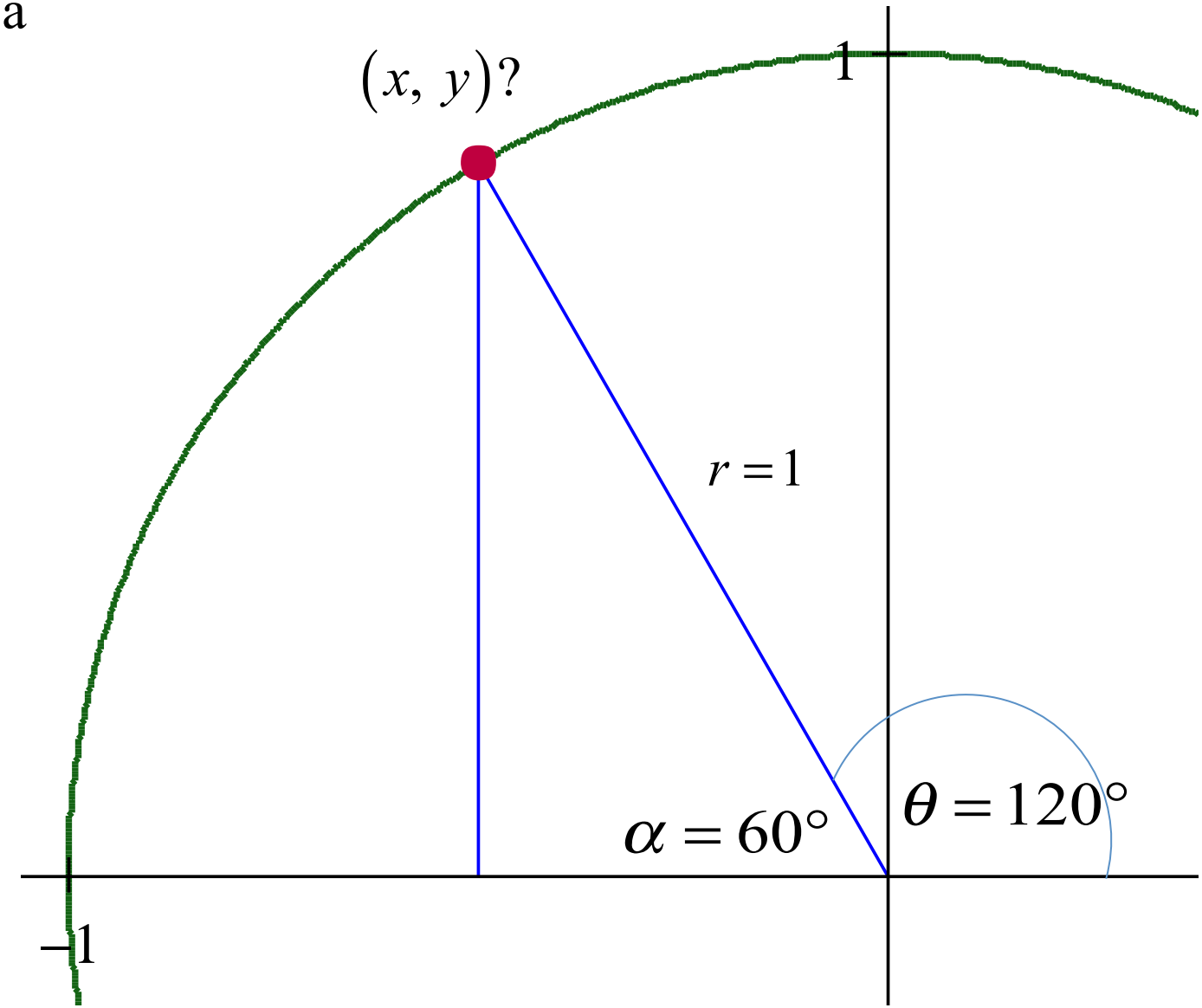

y
(x, y)?
1
$r = 1$
$\theta = 120°$
x
−1
1
−1

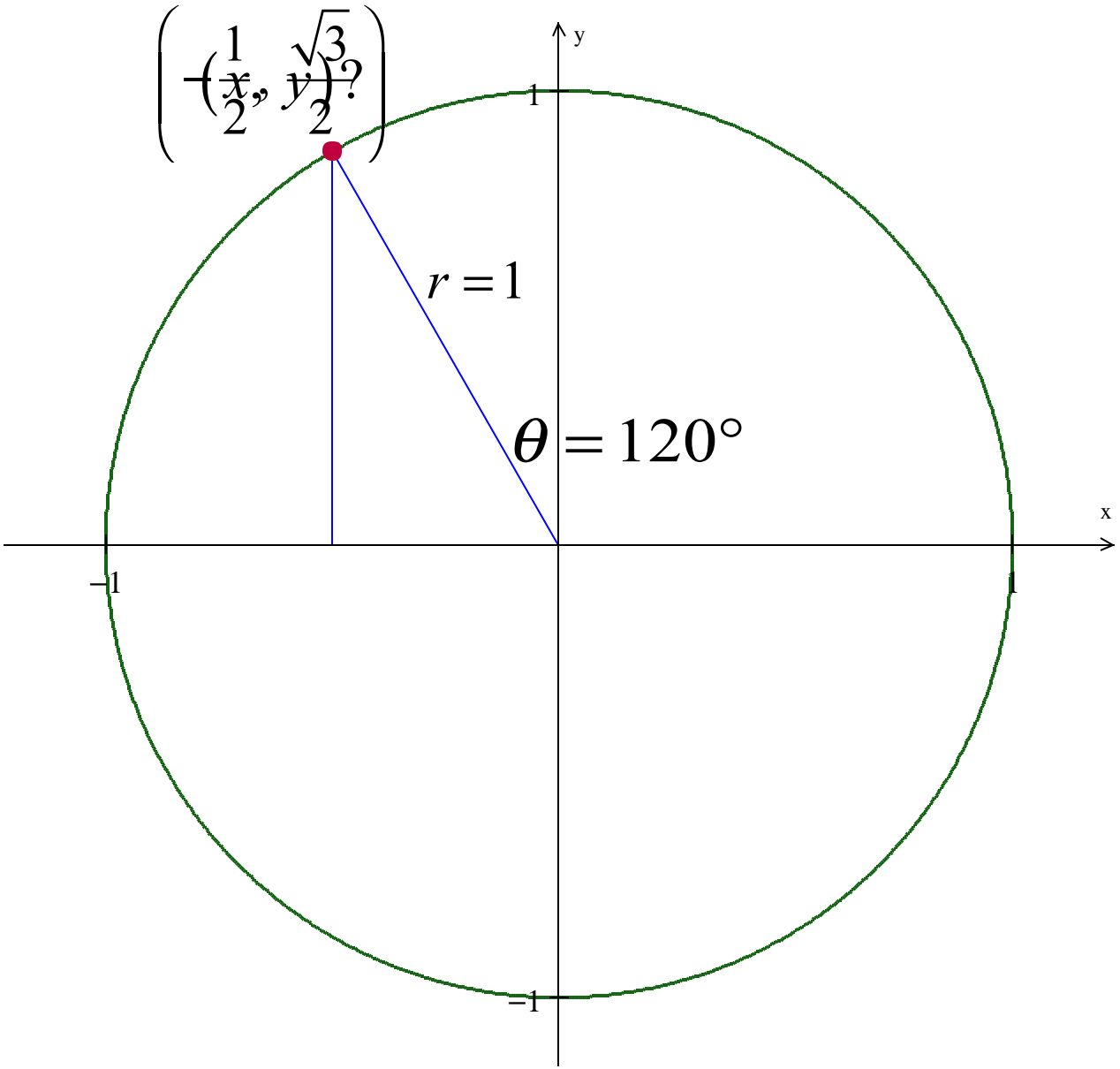
α here is called a
<u>reference angle</u>

$\sin 60° =$

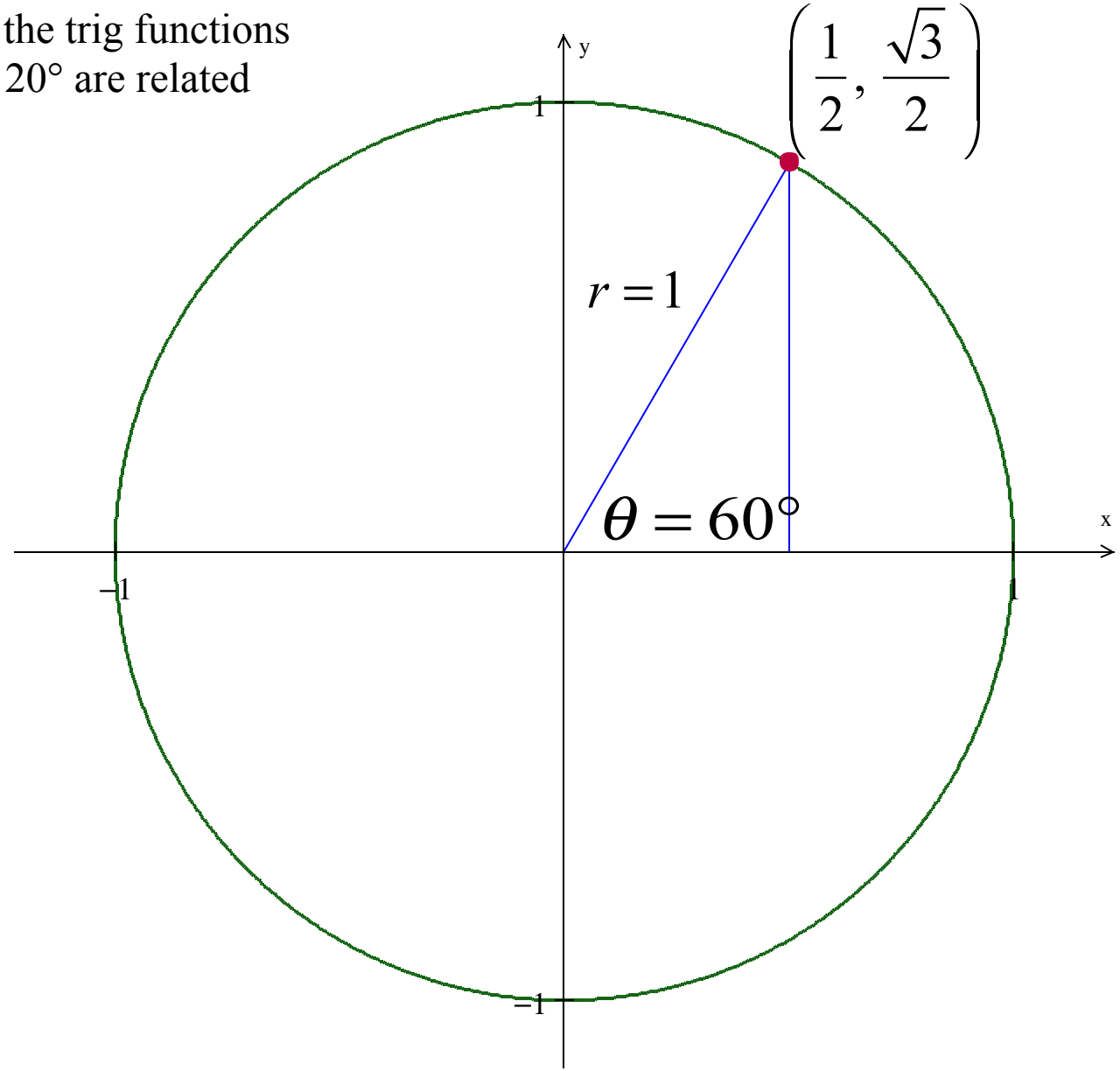
$\cos 60° =$

$\tan 60° =$

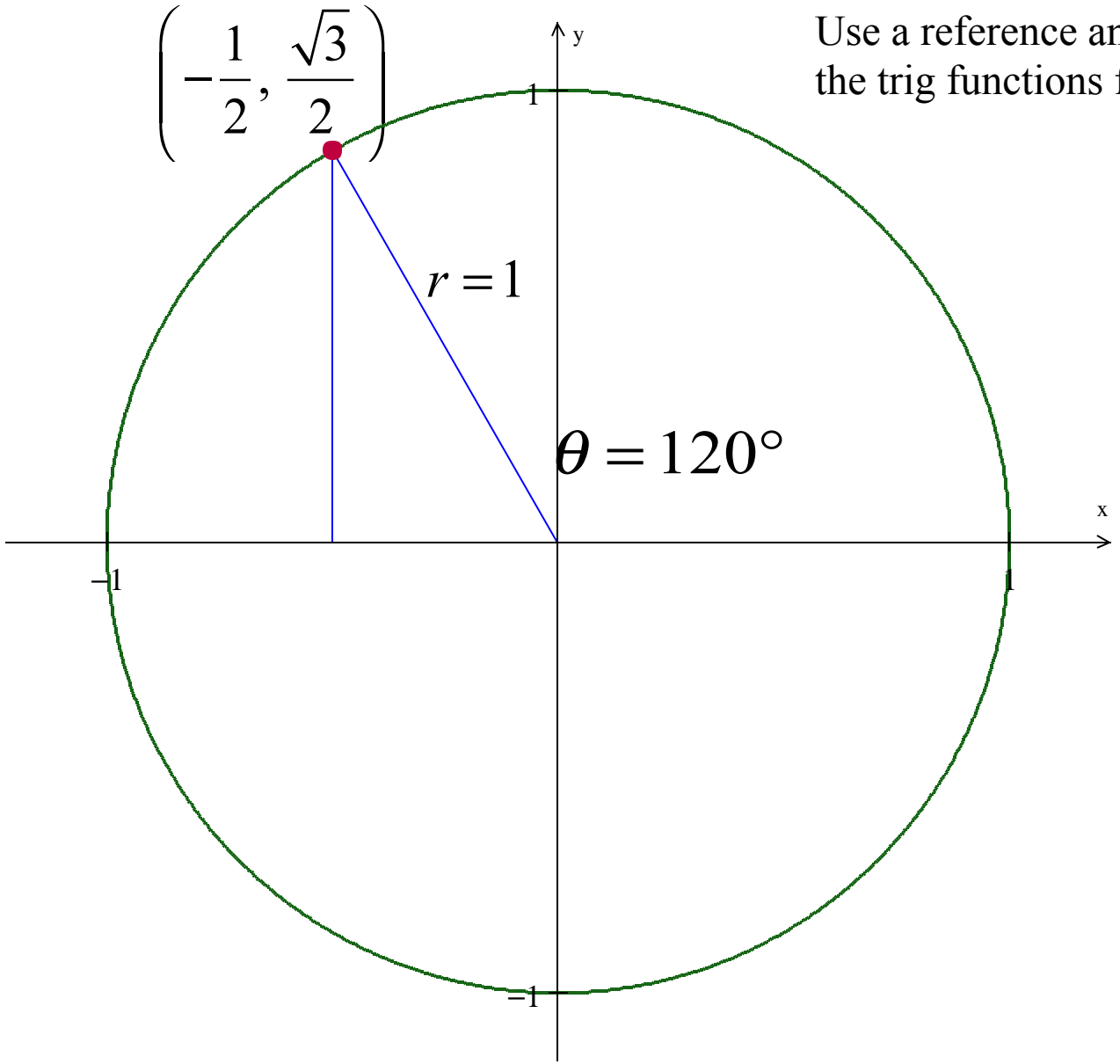



$\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$
(x, y)?
y
1
$r = 1$
$\theta = 120°$
x
−1
1
−1

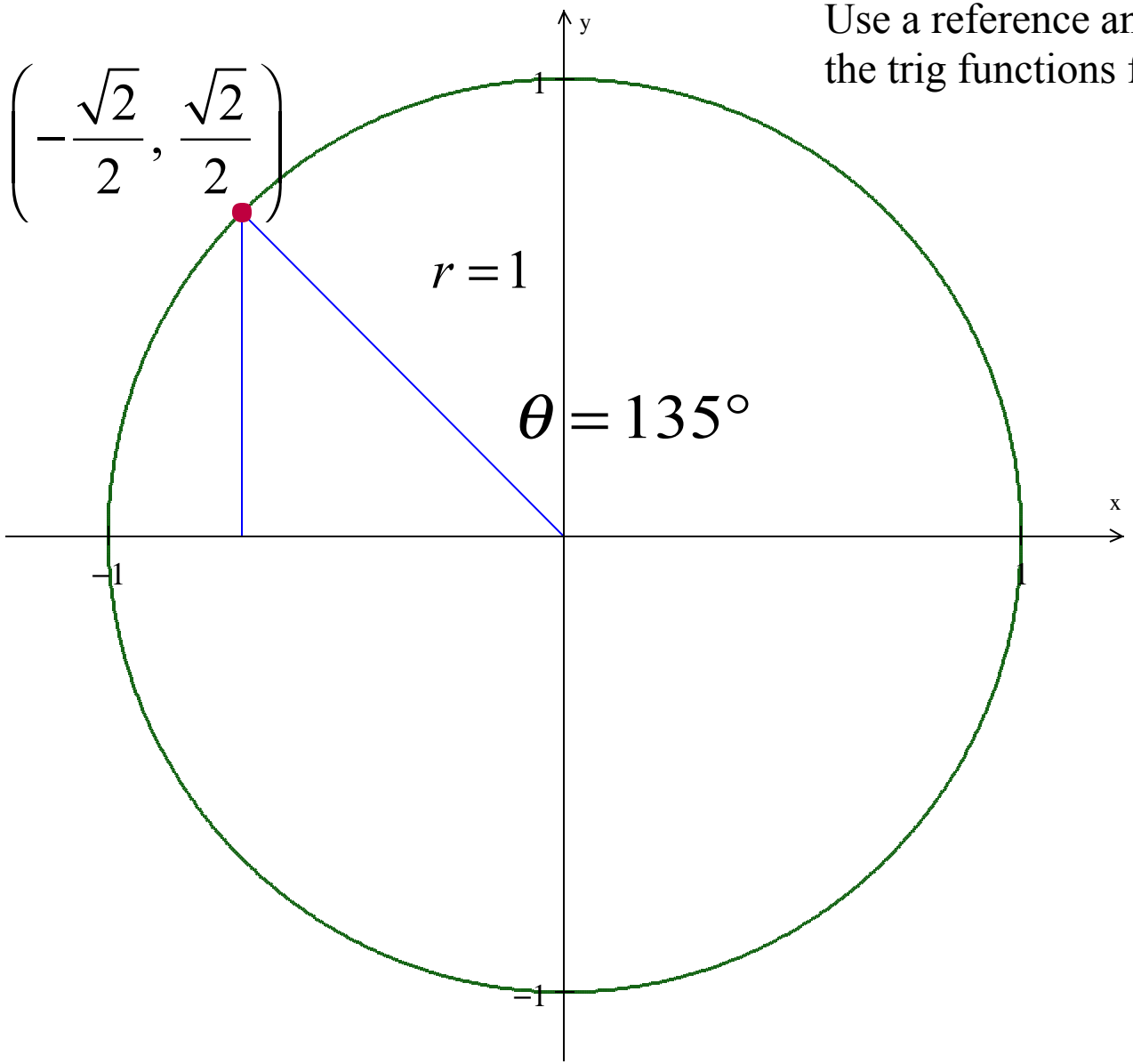
Notice how the trig functions of 60° and 120° are related



Use a reference angle to find the trig functions for 135°



Use a reference angle to find the trig functions for 135°



	0°	30°	45°	60°	90°	120°	135°	150°	180°
θ^{rad}	0^{rad}								
$\sin\theta$	$\frac{\sqrt{0}}{2}$	$\frac{\sqrt{1}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{4}}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{1}}{2}$	$\frac{\sqrt{0}}{2}$
$\cos\theta$	$\frac{\sqrt{4}}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{1}}{2}$	$\frac{\sqrt{0}}{2}$	$-\frac{\sqrt{1}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{4}}{2}$