

29 (a) $x^2 = x \Rightarrow x^2 - x = 0 \Rightarrow x(x-1) = 0 \Rightarrow x = 0, 1$

(b) $\sin^2 \theta = \sin \theta \Rightarrow \sin^2 \theta - \sin \theta = 0 \Rightarrow \sin \theta(\sin \theta - 1) = 0 \Rightarrow \sin \theta = 0, 1$

Since $\theta_R = \sin^{-1} 0 = 0^\circ$ or $\theta_R = \sin^{-1} 1 = 90^\circ$ and sine is positive in quadrants I & II, $\theta = 0^\circ, 90^\circ, 180^\circ$.

Graph $Y_1 = (\sin(X))^2$ and $Y_2 = \sin(X)$ in degree mode in $[0^\circ, 360^\circ, 45^\circ]$ by $[-1.5, 1.5, 1]$. See *Figure 29a*.

Table $Y_1 = (\sin(X))^2$ and $Y_2 = \sin(X)$ in degree mode starting at $x = 0$, incrementing by 45. See *Figure 29b*.

$[0^\circ, 360^\circ, 45^\circ]$ by $[-1.5, 1.5, 1]$

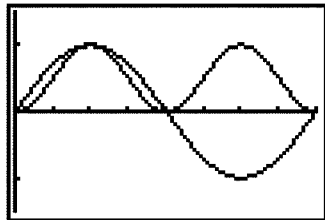


Figure 29a

X	Y ₁	Y ₂
0	0	0
45	.5	.70711
90	1	1
135	.5	.70711
180	0	0
225	.5	-.70711
270	1	-1

Y₁ = (sin(X))²

Figure 29b