

47 (a) Apply Algorithm 5.1. An angle $\theta = -\pi$ radians in standard position has terminal side that intersects the unit circle at the point $(-1, 0)$. Therefore $\sin(-\pi) = 0$.

(b) Using radian mode, table $Y_1 = \sin(X)$ starting at $x = 0$, incrementing by $-\frac{\pi}{4}$.

From *Figure 47a* we see that when $x = -\pi \approx -3.142$, $\sin(-\pi) = 0$.

(c) From the graph of $Y_1 = \sin(X)$ in *Figure 47b* it can be seen that $\sin(-\pi) = 0$.

Calculator support for this result can be seen in *Figure 47c*.

X	Y ₁	
0	0	
-.7854	-.7071	
-1.571	-1	
-2.356	-.7071	
-3.142	0	
-3.927	.70711	
-4.712	1	
X = -3.14159265359		

Figure 47a

$[-2\pi, 2\pi, \pi/2]$ by $[-4, 4, 1]$

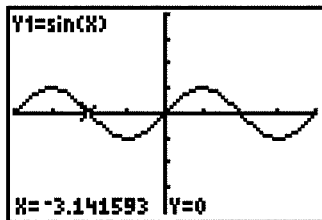


Figure 47b

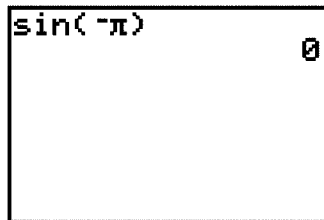


Figure 47c