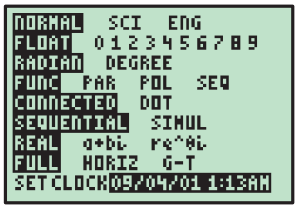
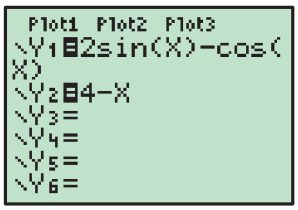
CHAPTER 11 - SOLVING TRIGONOMETRIC EQUATIONS

TI-84 Plus

Press MODE , scroll down to **RADIAN**, and press ENTER .

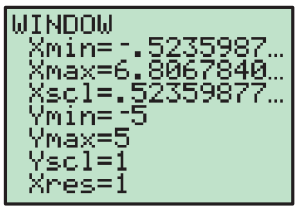


To solve the equation $2\sin x - \cos x = 4 - x$ for $0 \leqslant x \leqslant 2\pi$, press Y= , then store $2\sin x - \cos x$ into **Y1** and $4 - x$ into **Y2** .

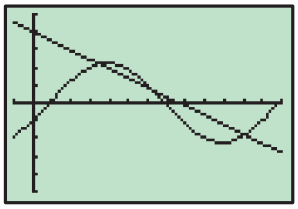


Press WINDOW , and set $\text{Xmin} = -\frac{\pi}{6}$, $\text{Xmax} = \frac{13\pi}{6}$, and $\text{Xscl} = \frac{\pi}{6}$.

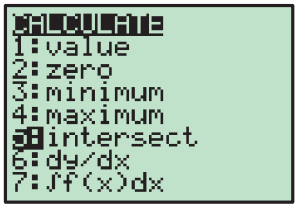
(π is entered by pressing 2nd ^ .)

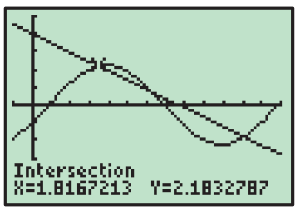


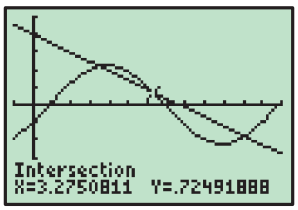
Press GRAPH to draw the graphs.

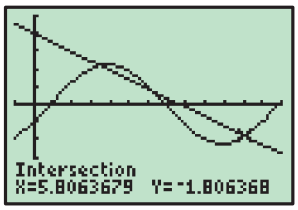


To find where the graphs intersect, press 2nd TRACE (**CALC**) **5 : intersect**. Press ENTER twice, then move the cursor close to the first intersection point and press ENTER once more. The intersection point $(1.82,\ 2.18)$ is given. Repeat this process to find the remaining intersection points.









So, the solutions to $2\sin x - \cos x = 4 - x$ are $x \approx 1.82,\ 3.28,$ and 5.81 .