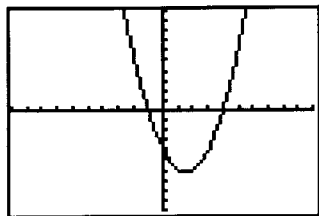


- 49** (a) **Graphical:** Graph the equation  $Y_1 = X^2 - 3X - 4$  in  $[-10, 10, 1]$  by  $[-10, 10, 1]$ . The inequality  $x^2 - 3x - 4 < 0$  is satisfied when the graph of  $Y_1$  is below the  $x$ -axis. This occurs when  $-1 < x < 4$ . See *Figure 49a*.

$[-10, 10, 1]$  by  $[-10, 10, 1]$



*Figure 49a*

X	Y1
-2.25	7.8125
-1	0
.25	-4.688
1.5	-6.25
2.75	-4.688
4	0
5.25	7.8125

$Y_1 = X^2 - 3X - 4$

*Figure 49b*

- (b) **Numerical:** Table  $Y_1 = X^2 - 3X - 4$  starting at  $x = -2.25$ , incrementing by 1.25. It is evident that  $Y_1 < 0$  when  $-1 < x < 4$ . See *Figure 49b*.
- (c) **Symbolic:** Start by solving  $x^2 - 3x - 4 = 0 \Rightarrow (x - 4)(x + 1) = 0 \Rightarrow x = -1$  or  $4$ . Then the inequality  $x^2 - 3x - 4 < 0$  is equivalent to  $-1 < x < 4$ .