55 Refer to the solution for exercise 53.

(a) $a = 0.5(92-58) = 17,\ b = \dfrac{\pi}{6},\ c = 7,\ d = 0.5(92+58) = 75$. Thus $f(x) = 17\cos\left(\dfrac{\pi}{6}(x-7)\right) + 75$.

The graph of f and the actual data are shown together in [0, 25, 2] by [40, 100, 10]. See *Figure 55.*

(b) Yes, different values of c are possible of the form $c = 7 + 12n$ where n is an integer.

[0, 25, 2] by [40, 100, 10]

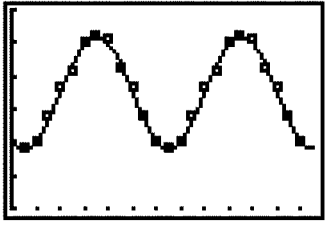

Figure 55