

57 (a) Scatterplot the data (2, 3), (3, 5), (4, 11), and (5, 21) in $[0, 6, 1]$ by $[0, 22, 1]$.

(b) Using the hint, let the vertex be located at (2, 3) so $h = 2$ and $k = 3$. Thus, $f(x) = a(x - 2)^2 + 3$. Graph f together with the data. Since the data is increasing to the right of the vertex, a is positive. By adjusting a , it can be determined that $a = 2$. Thus, $f(x) = 2(x - 2)^2 + 3$. See *Figure 57a*.

(c) Table $f(x) = 2(x - 2)^2 + 3$ starting at $x = 2$, incrementing by 1. See *Figure 57b*. The table matches the data.

$[0, 6, 1]$ by $[0, 22, 1]$

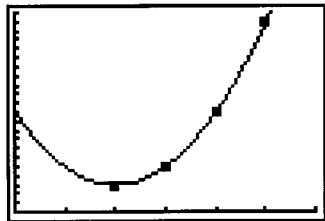


Figure 57a

X	Y1
2	3
3	5
4	11
5	21

$Y1 = 2(X - 2)^2 + 3$

Figure 57b