



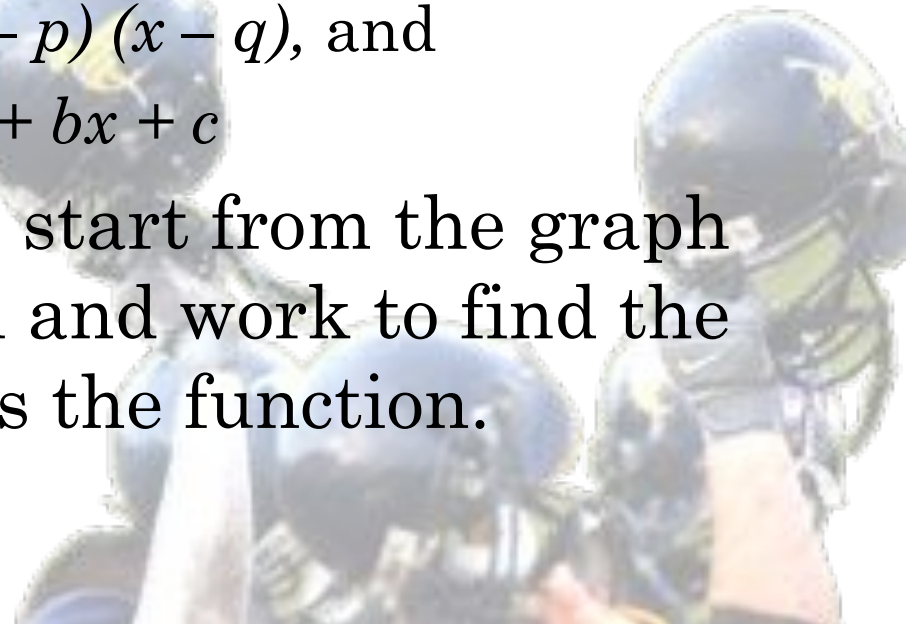
WRITE QUADRATIC FUNCTIONS AND MODELS

Section 4.10
Algebra 2
Mr. Keltner



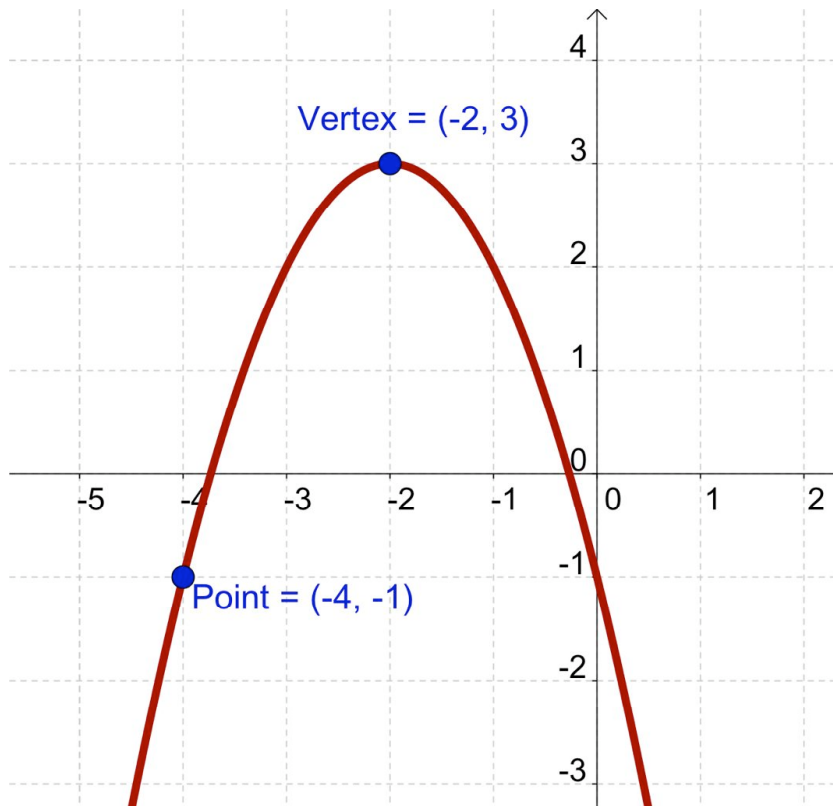
WHAT'S GOING ON

- In the first two sections of this chapter, you learned how to graph quadratic functions in:
 - ◆ Vertex form, $y = a(x - h)^2 + k$
 - ◆ Intercept form, $y = a(x - p)(x - q)$, and
 - ◆ Standard form, $y = ax^2 + bx + c$
- In this section, we will start from the graph of a quadratic function and work to find the equation that describes the function.



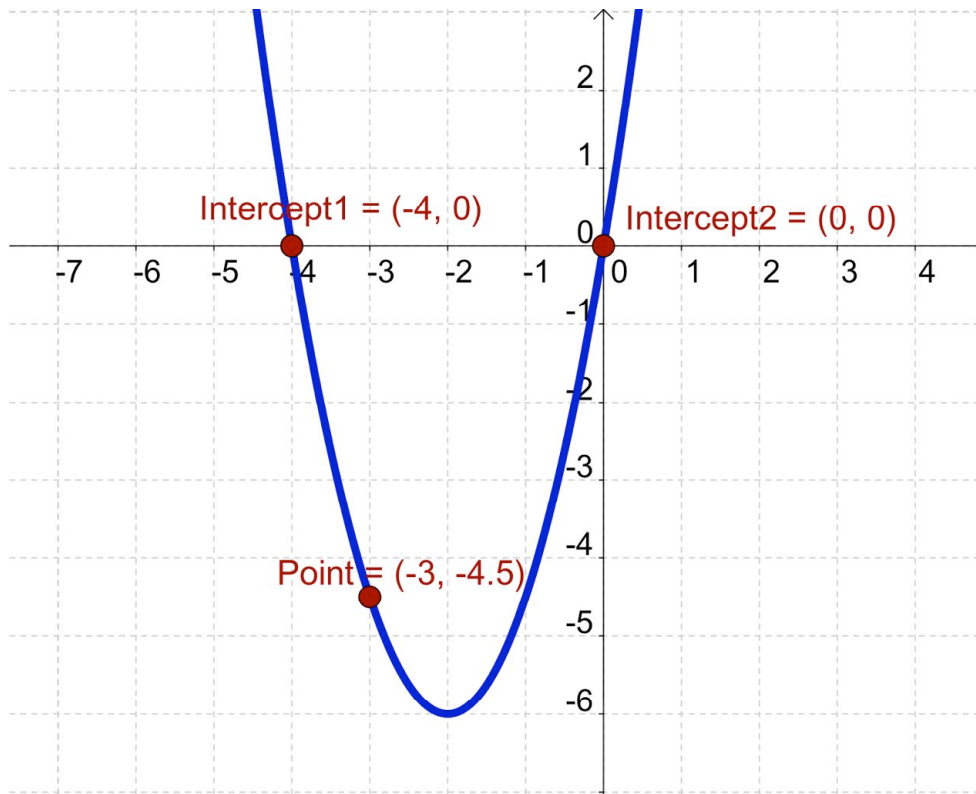
EXAMPLE 1

- Write a quadratic function for the parabola shown in vertex form.



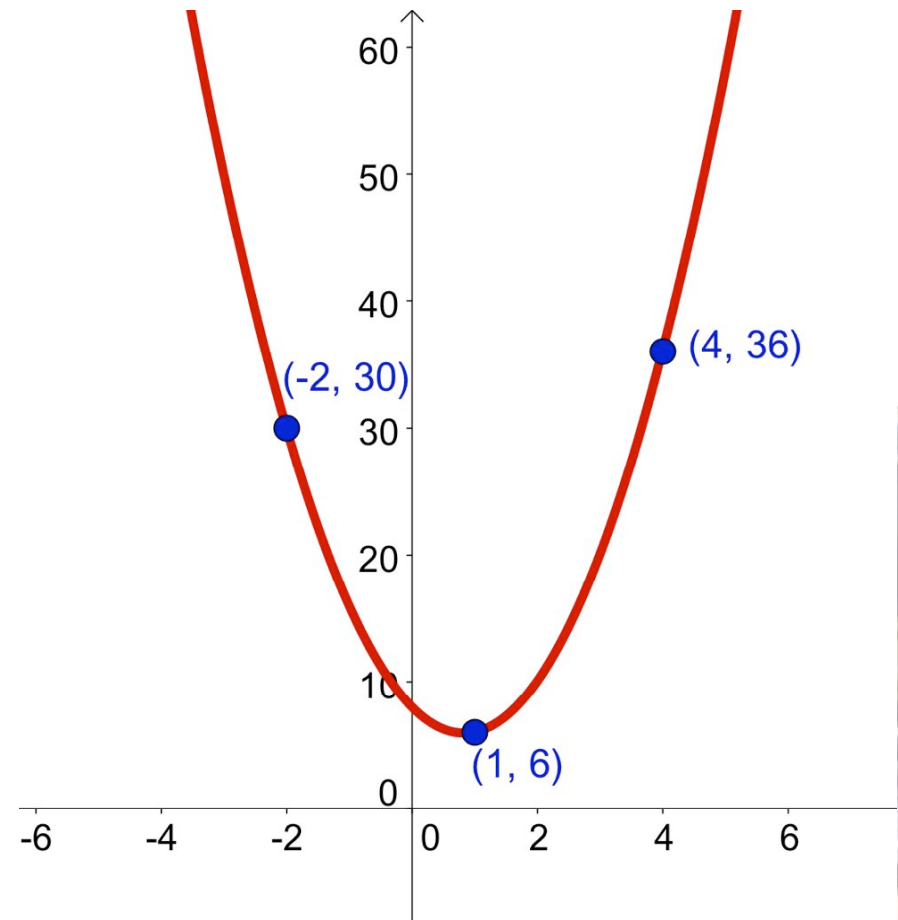
EXAMPLE 2

- Write a quadratic function for the parabola shown in intercept form.



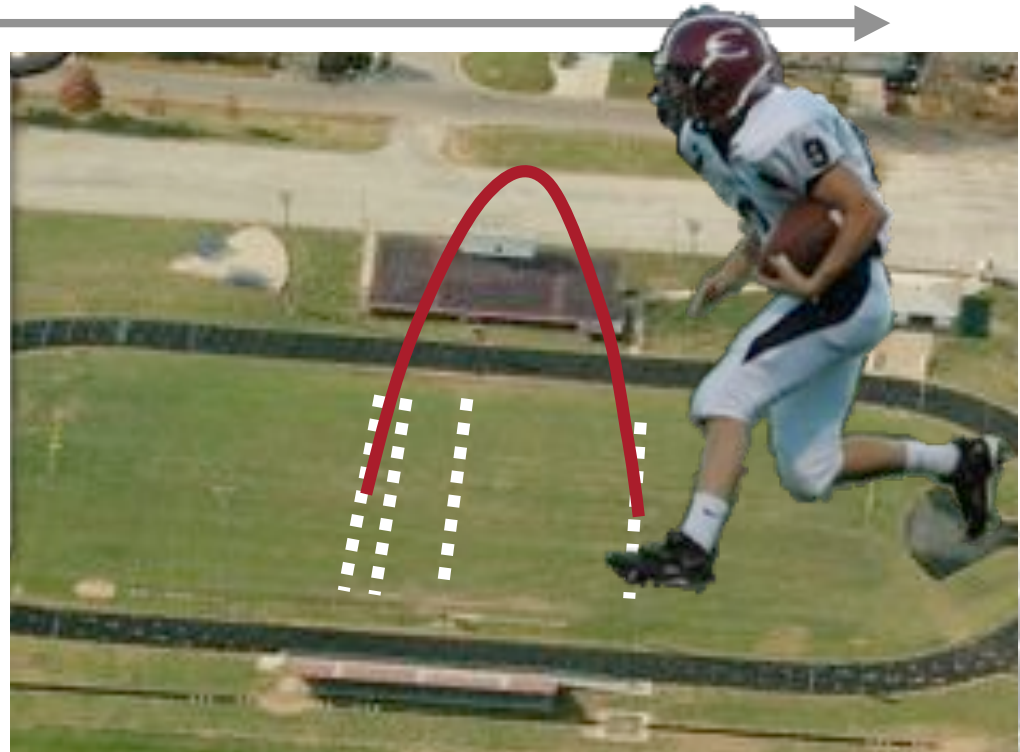
EXAMPLE 3

- Write a quadratic function in standard form for the parabola that passes through the points $(-2, 30)$, $(1, 6)$, and $(4, 36)$.



GO, REECE, GO!!!

<i>Place</i>	<i>Distance from Kicker</i>	<i>Height above field</i>
Kicker's foot	0 yds.	4 ft.
Cody Wells' eye level	3 yds.	20 ft.
Mr. Deterding eye level	15 yds.	60 ft.
Reece's hands	40 yds.	3 ft.



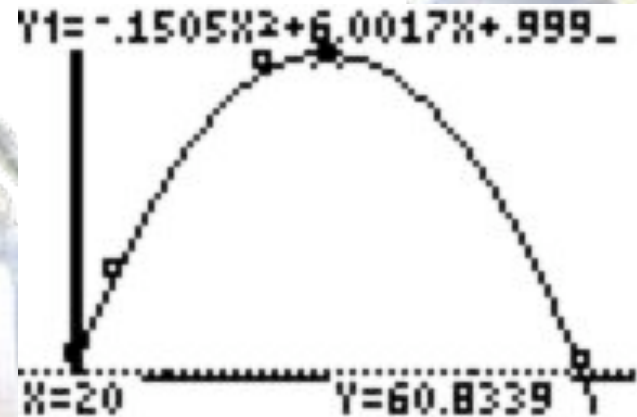
- The height of a football kicked by a kicker is observed by plenty of people. The table above shows the height of the ball when it is a particular distance from the punter (before Reece returns it for a touchdown, of course).

QUADRATIC REGRESSION USING THE TI-84


- To graph a quadratic regression model:
- Enter data values in L_1 & L_2 .
- **2nd - Y=** to make sure **Plot1** is turned on as a scatter plot.
- **ZOOM**, then **9:ZoomStat** to view our scatter plot.
- **2nd - MODE** to get back to a home screen.
- **STAT**, **→** to **CALC**, then find **5:QuadReg**
- Don't forget to include L_1 , L_2 to indicate where our data comes from.
- Press **VARS** below the arrow keys, then select **Y-VARS** and **1:Function...** to find **Y1** and copy the regression equation there.
- Press **GRAPH** to look at the scatter plot and graph simultaneously.

L1	L2	L3	1
0	4	-----	
3	20		
15	60		
40	3		
-----	-----		

L1(1) = 0



ASSESSMENT



PGS. 312-313:

**#'s 3-7, 11-14, 17-20,
23-25, AND 29-34**