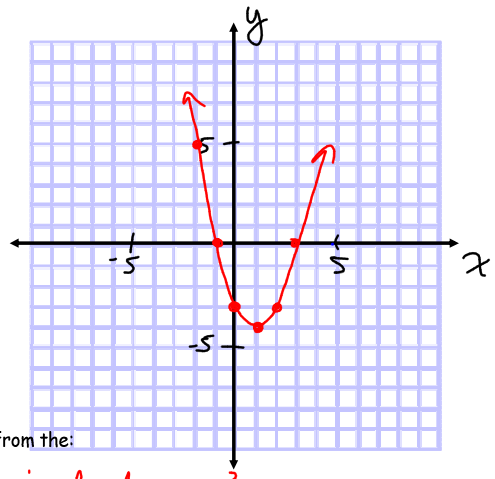
3.1 Graphing Quadratics with a TOV

Ex 1 Given $y = x^2-2x-3$

a) Graph using a table of values

x	y		
-3	12	-7	+2
-2	5	-5	+2
-1	0	-3	+2
0	-3	-1	+2
1	-4	+1	+2
2	-3	+3	+2
3	0		



b) State how you know the model is quadratic from the:

- Equation: The x terms includes x^2
- Graph: Graph is in the shape of a parabola
- TOV: Second differences are constant

Table of Values

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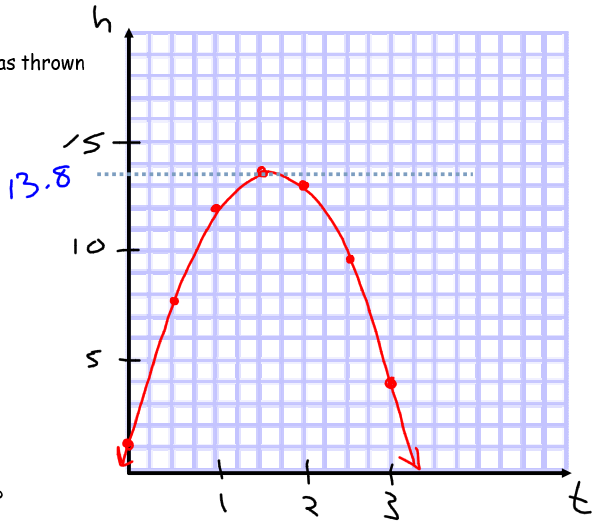
Ex 2

The table shows a football's height (m) above the ground over time (s) after it was thrown

t	h
0	1.1
0.5	7.8
1.0	12
1.5	13.8
2.0	13
2.5	9.75
3.0	4



a) Graph the data
draw a smooth curve through the points

b) Is the data quadratic? How can you tell?

Yes, it's in the shape of a parabola

c) What was the balls maximum height

13.8 m

d) For about how many seconds was the ball in the air?

~3.5 s

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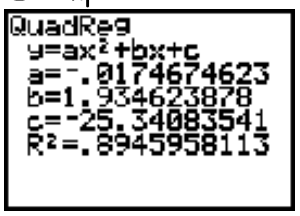
Ex 3 See handout for Graphing using Graphing Calculator

Important things to note:

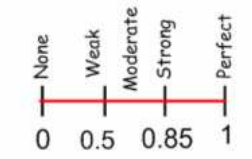
How to read the Calculator Screen

Example screen:



Write an equation for the relation:

The R^2 value that is displayed on the calculator
r is called the correlation coefficient.
The closer it is to 1, the better the equation fits the data.



How well does the curve fit the data?

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Practice: p174 #2-6

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