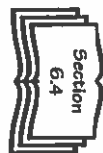


Practise

1. Describe a method that does not involve graphing, which you can use to identify whether data in a table represents a quadratic relation.



2. Leon was working on the relation below and filled in the table of values for first and second differences.

x	y	First Differences	Second Differences
-3	5		
-2	7	2	
-1	9	2	0
0	11	2	0
1	13	2	0

Leon concluded the relation is quadratic because there is a constant value of zero for the second differences. Is he correct? Explain.

3. a) Complete the table. The first one has been done for you.

x	y	First Differences	Second Differences
-3	18		
-2	11	$11 - 18 = -7$	
-1	6	$6 - 11 = -5$	$-5 - (-7) = \underline{\quad}$
0	3		
1	2		
2	3		
3	6		

- b) This data forms a _____ relation because _____
 c) Based on the values you determined for the table, what would the shape of this graph be? Explain why.

4. a) Make a table of values for the relation $y = x^2 + 5x + 4$ and use the values in the table to determine whether it is quadratic.



x	y	First Differences	Second Differences
-5	4	$\underline{\quad} - 10 = \underline{\quad}$	
-4			
-3			
-2			
-1			
0			
1			

Sample calculation:
 $y = x^2 + 5x + 4$
 $y = (-5)^2 + 5(-5) + 4$
 $y = 25 - 25 + 4$
 $y = 4$

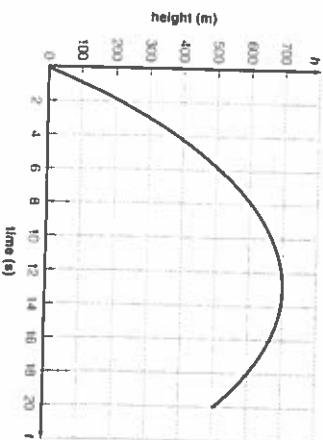
Calculations:

- b) Is the relation quadratic? _____ Based on the equation, does this make sense? Explain.

5. This graph shows a quadratic relation.

- a) Make a table of values for the graph.

time (s)	height (m)
0	
3	
5	
6	
8	
10	
13	
15	
20	



- b) Use a graphing calculator to find the expression for this relation. The equation is _____