U2D3a MCR 3UI **QUADRATIC FUNCTIONS**

Summary Of Quadratic Functions
(Everything you should know but may have forgotten)

1. Vertex Form **Example** $g(x) = -\frac{1}{2}(x+1)^2 - 10$

State:

direction of opening **vertex**

Axis of Symmetry **Max/Min**

When the optimal value occurs **y-int** **Range:**

2. Standard Form **Example** $f(x) = -3x^2 - 18x + 11$

State:

direction of opening **y-int**

3. Factored Form **Example** $y = 3(x-4)(x+2)$

State:

direction of opening **roots**

Axis of Symmetry **Max/Min**

When the optimal value occurs **vertex**

y-intercept **Range:**

Difference Tables

Calculate the first and second differences for the following table.

Is this relation linear? Why?

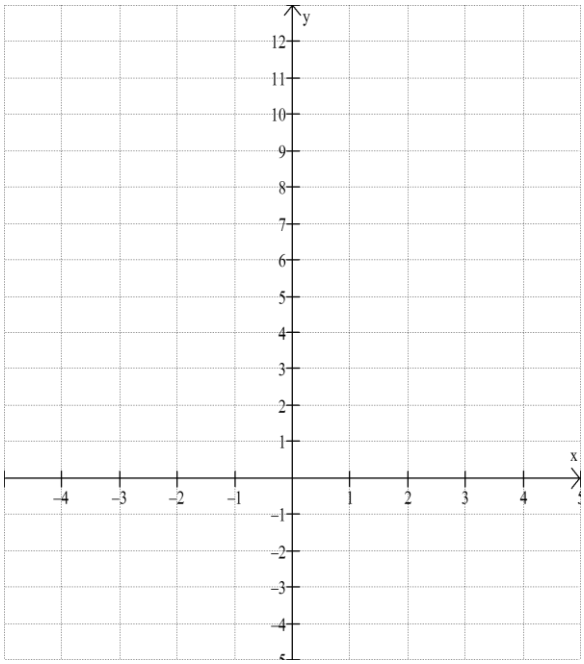
X	Y		
-2	22		
-1	12		
0	6		
1	4		
2	6		
3	12		

Is this relation quadratic? Why?

What is the direction of opening? Why?

Graphing: Graph the following.

a) $y=(x-3)(x+1)$



b) $y=-2x^2+6x+8$