



## Leith Academy National 5 Home Learning



### QUADRATIC FUNCTIONS

### NON-CALCULATOR

1) Evaluate the discriminant of these quadratic equations and hence state the nature of the roots.

a)  $y = x^2 + 5x + 3$

b)  $y = x^2 + 4x + 5$

c)  $y = 9x^2 - 6x - 1$

2) Express each of the following in the form  $(x + a)^2 + b$ .

a)  $x^2 + 8x + 21$

b)  $x^2 - 12x + 49$

c)  $x^2 - 4x - 3$

3) Calculate the coordinates of the turning points of these quadratic equations.

a)  $y = x^2 - 10x + 16$

b)  $y = x^2 + 8x + 20$

c)  $y = (x + 6)(x - 2)$