

## Investigation – Graphing Quadratic Functions

IB Math SL

1. For each function:

- i. Find the value of the discriminant,  $b^2 - 4ac$
- ii. Graph the function on your GDC and then sketch the graph

a.  $y = x^2 - 3x - 5$

e.  $y = x^2 - 6x + 9$

b.  $y = 3x^2 - 6x + 4$

f.  $y = 2x^2 - 4x + 2$

c.  $y = x^2 + 2x + 7$

g.  $y = -x^2 + 5x + 2$

d.  $y = 4x^2 + 3x + 5$

h.  $y = x^2 + 7x + 3$

2. What is the relationship between the graph of the function and the value of the discriminant?