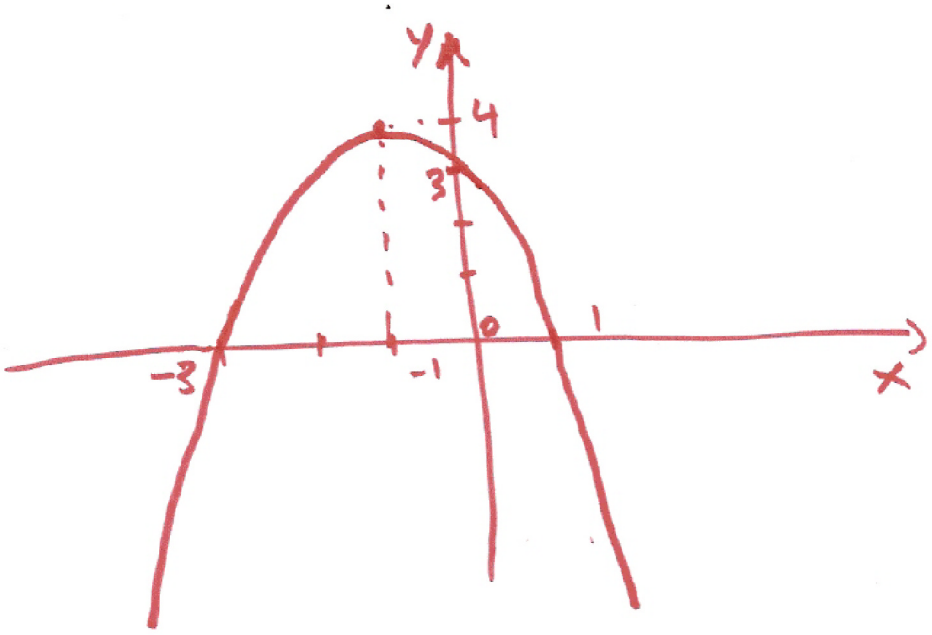
Problem 9: Consider the function $f(x) = 3 - 2x - x^2$.

(a) Put it in normal form by completing the squares,

$f(x) = 3 - (x^2 + 2x) = 3 - [(x+1)^2 - 1] = 3 - (x+1)^2 + 1$

$= 4 - (x+1)^2$

(b) sketch its graph and carefully mark all the relevant points,



X-INT:

$(x+1)^2 = 4$

$x+1 = \pm 2$

$x = 1, -3$

Y-INT

$f(0) = 3$

(c) determine if it has a maximum value or a minimum value and if so compute it.

IT HAS A MAXIMUM VALUE OF $\boxed{4}$