Formal Home Exercise 3 Quadratics Marks

1) For what values of *k* does the equation *x*2 – 5*x* + (*k* + 6) = 0 have

equal roots? (3)

2) a) Given *f* (*x*) = *x*2 + 2*x* – 8, express *f* (*x*) in the form (*x* + *a*)2 – *b*. (2)

b) State the minimum value of the function *f* (*x*). (1)

3) Show that the line with equation *y* = 2*x* + 1 does not intersect the parabola with

equation *y* = *x*2 + 3*x* + 4. (5)

4) Solve (3)

5) a) Write (3)

b) Hence or otherwise sketch the graph of showing clearly the turning point. (2)

6) Prove that the roots of the equation 2*x*2 + *px* – 3 = 0 are real for all values of *p*. (4)

7) Show that the roots of (7)