



# Ross High School: Mathematics Department

## Higher Mathematics: Homework 7

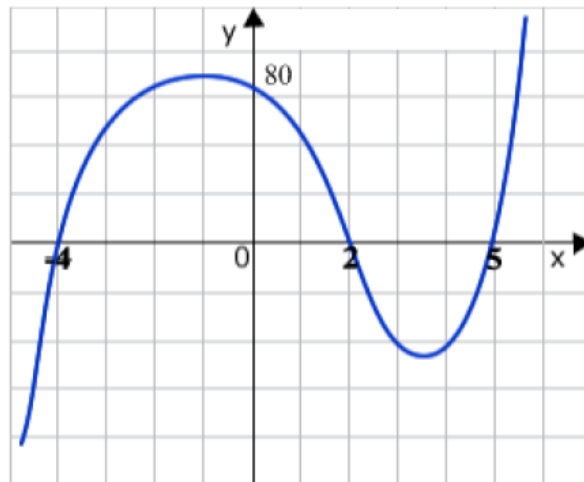
1. For what range of values of  $k$  does the equation  $x^2 - kx + (2k-3) = 0$  have distinct real roots? (4)

2. a) Express  $2x^2 - 8x + 13$  in the form  $a(x - b)^2 + c$

b) Hence find the coordinates of the turning point and state its nature. (3)

3. Calculate the quotient and remainder when  $x^3 - 11x + 10$  is divided by  $x + 3$  (2)

4. Find the equation of the graph shown



(4)

5. Find the coordinates of the points where the line  $y = 5x - 8$  meets the curve  $y = x^3 - 2x^2 + x$  (5)