**ADVANCED FUNCTIONS 12 – CHAPTER 2 REVIEW :**

**SOLVING POLYNOMIALS AND INEQUALITIES**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_**

**Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**KNOWLEDGE / 16**

1. Divide x⁴ + 3x³ - 2x² -4x + 1 by x - 5 [ 4 ]
2. Use factor theorem to determine If (x +5 ) is a factor of 12x³ + 6x² - 3x – 2 [ 3 ]
3. Define the regions where f(x) < 0 if f(x) = - (x – 1 ) ( x+ 3) ( 2x + 5 ) , and graph the inequality. [ 6 ]
4. Solve the inequality algebraically : -4x +3 < 78 - 2x [3 ]
5. Use remainder theorem to find the remainder if 2 x ³ - 6x² –3 x – 9 is divided by x+2

[ 4 ]

1. Calculate the equation for a function that has zeroes -3, 4, and 7 and has a y- intercept of 8.

**APPLICATION / 6**

1. The volume of a cylinder is modelled with the equation V= ‘ cm . Show that the length of the box could be ’ 80-2x’ cm if the height of the box is ‘x’ cm. [ 6 ]

**COMMUNICATION /8**

1. Sketch the function f(x) = 2x⁴ -x³ + 2x - 8, showing x and y intercepts. [ 8 ]