**MATHEMATICS METHODS 1 & 2**

**Investigation 2**

**Polynomial Division**

**In-Class Validation Total marks: 45 Time allowed: 50 mins**

**NAME** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 1: [2,2 marks]

Using the Remainder Theorem, find the remainder when:

1. is divided by
2. is divided by

Question 2: [3 marks]

A polynomial is given by where a is a constant.

When is divided by there is a remainder of 7.

Find the value of a.

Question 3: [2,2 marks]

Using the Factor Theorem, show that:

1. is a factor of
2. is a factor of

Question 4: [4,1 marks]

1. Use the factor theorem to fully factorise.
2. Hence solve the equation

Question 5: [3 marks]

Given that is a factor of find the value of a.

Question 6: [5,5 marks]

Complete the following divisions using one of the methods from parts D, E and F of the take home

component.

Question 7: [5,5 marks]

Solve the following equations by factorising. You should only use the Factor Theorem to find the first factor.

1. =0

Question 8: [6 marks]

Find the coordinates of the points where crosses the *x* axis.