Advanced Higher Maths

Further Number Theory

2001

Use the Euclidean algorithm to find integers x and y such that $149x+139y=1$.

(4 marks)

2004

Use the Euclidean algorithm to show that $(231,17)=1$ where (a,b) denotes the highest common factor of a and b.

Hence find integers x and y such that $231x+17y=1$. **(4 marks)**

2007

Use the Euclidean algorithm to find integers p & q such that $599p+53q=1$.

(4 marks)

2012

Use the division algorithm to express 1234_{10} in base 7. **(3 marks)**

2013

Use the Euclidean algorithm to obtain the greatest common divisor of 1204 and 833, expressing it in the form $1204a+833b$, where a and b are integers.

(4 marks)

2015

Use the Euclidean algorithm to find integers p and q such that

$$3066p+713q=1.$$ **(4 marks)**