Homework 4-1

(1/1 point)

What is the polynomial analogue of the conductor of an ABC triple?

- The degree of the product of three polynomials
- ✔ The number of distinct complex roots of the product of three polynomials
- The irreducible factor of largest degree of the product of three polynomials
- The ratio of the product of two polynomials divided by the third polynomial
- There is no polynomial analogue of the conductor.

Homework 4-2

(6/6 points)

Calculate the conductors for the following ABC triples.

1. (A,B,C) = (23, 73, 96)

10074 ✔

10074

2. (A,B,C) = (1, 127, 128)

254 ✔

254

3. (A,B,C) = (1, 4374, 4375)

210 ✔

210

Homework 4-3

(2/2 points)

Consider the following polynomial ABC triple

$$(f(x), g(x), h(x)) = (x-1, x^3+3x^2+2x+2, x^3+3x^2+3x+1).$$

The conductor polynomial is

$$N(x) = (x-1)(x+A)(x^3+Bx^2+2x+C).$$

Fill an integer in each of the blanks.

A	B	C
1 ✔	3 ✔	2 ✔
1	3	2