

## Math 371 Homework#12

We will discuss these examples on Tuesday's class

1. Find the degree of the splitting field  $K$  of the following polynomials over  $\mathbb{Q}$ .
  - (a)  $x^3 - 2$
  - (b)  $x^4 - 1$
  - (c)  $x^4 + 1$
2. Determine the Galois group of the field extensions in question 1 and use the groups to find the intermediate extensions  $L$  in  $\mathbb{Q} \subset L \subset K$ .