

# MAT347Y1 HW13 Marking Scheme

Friday, March 6

**Total: 27 points. (Max. 31 with bonuses)**

**#1:** 10 points (+2 for f): 2 per part.

**#2:** 6 points. For each part:

- (1) Lattice of intermediate field extensions
- (1) Galois Group and lattice of subgroups
- (1) Describe Galois correspondence (even for (a)!) and whether it's a bijection

**#3:** 3 points.

**#4:** 8 points (+2 for b): 2 per part.

- Part (b) is a bonus because it is incorrect as stated. The map  $A \rightarrow \phi_A$  is not a homomorphism: it satisfies  $\phi_{AB} = \phi_B \phi_A$  rather than  $\phi_{AB} = \phi_A \phi_B$ . Instead, the map  $A \rightarrow \phi_{A^{-1}}$  is a homomorphism. Bonus points to those who fixed this.