

Lecture 5: Quiz

Name:

Problem 1

Which of the following formulas solves the **quadratic equation**: $x^2 + bx + c = 0$.

- a) $x = -b/2 \pm \sqrt{b^2/4 + c}$
 b) $x = b/2 \pm \sqrt{b^2/4 - c}$
 c) $x = -b/2 \pm \sqrt{c + b^2/4}$
 d) $x = b/2 \pm \sqrt{c - b^2/4}$

Problem 2

- a) What is the key idea to solve the quadratic equation?
 b) Which is the smallest degree of polynomial equations which can not be solved by radicals in general?

Problem 3

In which century has one succeeded to solve the quartic equation by radicals?

- a) In the 15'th century.
 b) In the 16'th century.
 c) In the 17'th century.
 d) In the 18'th century.
 e) Trick question. One can not solve the quartic with radicals.

Problem 4

The set of all possible rotations and reflections which leave invariant an isoscele triangle which is not equilateral has how many elements?

- a) 2 b) 4 c) 6 d) 8

The set of all possible rotations and reflections which leave invariant a square has how many elements?

- a) 2 b) 4 c) 6 d) 8

Problem 5

The set of all possible rotations which leave invariant a regular pentagon has how many elements?

- a) 2 b) 5 c) 10 d) 20

Problem 6

- a) Which of the choices A-F is the Rubik cube.
 b) Which of the choices A-F is the 15 puzzle?



A



B



C



D



E



F

Problem 7

The **pyramorphix** is one of the simplest possible groups. How many elements does the group have?

- a) 24
 b) $24 * 3^4$
 c) 12
 d) $12 * 3^4$

