

Quiz Rubrik

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Problem 1a

This was a numerical question; a point was given if and only if the numerical answer was right.

Problem 1b

As long as the student wrote an expression that had the same numerical value as the correct answer this was marked right.

Problem 2a

Half a point was given to students who mentioned symmetry or something along the lines of an operation preserving an object. This was so that students who missed the class the second day of the topic on group theory would not be penalized too heavily. Full points were given if all or all but one of the group axioms were listed.

Problem 2b

Full points were given if every square was marked correctly. If up to two mistakes were made half a point was given.

Problem 2c

Full points were given only if the student answered yes.

Problem 3a

The correct permutation was:

1	2	3	4
↓	↓	↓	↓
3	2	4	1

Many students had creative ways of representing their permutations, but as long as it was clear they meant this one full points were given. No partial credit was given for this problem.

Problem 3b

Many permutations worked for this problem, and full credit was given if the student answered with one of them. The identity permutation was also accepted since it technically satisfies the constraints.

Problem 4a

Full points were given if the student mentioned lengths being preserved and didn't add any extra conditions. Only half points were given if the student mentioned extra conditions. No points were given if there was no mention of lengths being preserved.

Problem 4b

Full points were given if the student mentioned all isometries: rotation, translation, reflection. Note that mentioning the identity is not required since it is a special case of the ones mentioned above. Only half points were given if the student listed 2 out of 3 isometries and didn't mention any non-isometries, or if they listed all isometries but also included at most one extra non-isometry.

Problem 4c

Full points were given if the student mentioned all isometries: rotation, reflection, and taking inversions about an **orthogonal** circle. If the student mentioned all but one of these and did not mention any non-isometries or mentioned an extra non-isometry half points were given. Note that simply mentioning circle inversions is not enough for it to count - the student must have also specified that the circles being inverted about are orthogonal to the Poincaré disk.

5a

Full points were given if the student answered $(\frac{4}{3}, 0)$. No partial credit was given for this problem.

5b

Full points were given if the student drew the correct line. Whether the student included the origin did not influence the result of the grading. If the student drew a line through the origin other than the correct one, half points were given. This was so that if they mistaked the line defined by $x = 0$ for the one defined by $y = 0$ but still understood the concept of an inversion they were not penalized too harshly.

5c

Full points were given if the student drew the correct line. Otherwise no points were given.