

GROUP HOMEWORK

You will complete problem sets in groups of four students. For each assignment, group members will take on the following roles:

Manager: Finds a time and place that the entire group can meet. Helps the meeting run smoothly. Oversees the selection of roles for the next meeting. The graded homework will be returned to the manager; the manager will make sure that everyone in the group has a copy.

Quality controller: Makes sure that the group's solutions are correct and make sense. If the group knows the answer is wrong but can't fix it, the group should state *why* it knows the answer is wrong.

Scribe: Neatly writes up the group's solutions to the problems. No one may be scribe more than three times.

Reporter: Helps the scribe by taking notes during the meeting. Prepares a brief summary of the meeting to be turned in with the problem set (need not be stapled to the problem set). The summary will state: where and when the group met (and for how long), who was there (and which role they had), what the group's favorite problem was (and why), and which problem was the most difficult.

Characteristics of Successful Mathematics Groups (by Tamara Veenstra, as adapted by sarah-marie belcastro)

- All group members are **present**.
- Group members arrive **prepared**.
- **Everyone** is encouraged to **participate** and everyone's contribution is **valued**.
- **Individuals** take personal **responsibility** for making a contribution.
- Members listen **actively**. They don't interrupt and they don't tune out.
- the group discusses problems until there is general **understanding**. Just getting an answer (even a correct one) is not the ending point.
- **Decisions** on correctness are based on **logic** and **reasoning**, not on group pressure.
- The group encourages **multiple approaches** to solving a problem. There may be many correct methods and even false starts are often helpful.
- From time to time the group **reflects** on how well it is working together.

The following rubric (developed by sarah-marie belcastro of Xavier University based on “How Doug Marks Papers” by Doug Shaw) will be used to evaluate homework problems.

- 5:** All parts of the problem are present. The solution is complete or near-complete and logically formulated. Explanations are clear, notation is correct and consistent, and conceptual understanding is apparent. The solution is not necessarily perfect; minor write-up problems, grammar errors, or arithmetic errors may be present.
- 4:** Almost all parts of the problem are present. The solution is complete or near-complete and logically formulated. Explanations are mainly clear, notation is mostly correct and consistent, and conceptual understanding is apparent. Careless mathematics errors may be present (for example, algebra, arithmetic). An intelligent, thoughtful, but somewhat incorrect approach may receive this score. The difference between a 4 and a 5 is that the 4-solution has one significant flaw. The difference between a 4 and a 3 is that a 4-solution exhibits better conceptual understanding.
- 3:** The solution is logically formulated with clear explanations, although one part of the problem may be missing. Or, the solution is complete and explanations are clear but there are serious logical flaws. Or, the solution may be complete and logically formulated but the explanations are unclear or lacking. Conceptual understanding of essential ideas is adequate. Many careless mathematical errors may be present (for example, algebra, arithmetic). Details are confused or missing.
- 2:** Explanation is lacking. Or, the solution shows serious misconceptions and some correct reasoning. Or, many parts of the problem are not present. Conceptual understanding is inadequate. Procedural errors are present. Or, logical/relational steps are missing. The difference between a 2 and a 3 is that a 2-solution does not exhibit adequate conceptual understanding of the essential details. The difference between a 2 and a 1 is that a 2-solution has some explanation, or has some correct reasoning.
- 1:** Explanation is completely missing. Or, many parts of the problem are not present. Or, the solution contains serious logical flaws, and lacks some explanation. Conceptual understanding is inadequate. Procedural errors are present, or logical/relational steps are missing. Poor response to the questions posed.
- 0:** Solution is missing. Or, solution is minimal and makes no sense.