

TEACHING AIDS

The teaching aids that are included can be reproduced for handouts or transparencies.

1. Reading Your Math Textbook, pages 1 and 2 (pp. 72–73)
2. Team Building Strategies, pages 1 and 2 (pp. 74–75)
3. Team Project Instructions and Deadlines (p. 76)
4. 100-cell grid for multiplication and fraction activities (p. 77)
5. Number lines (p. 78)
6. U.S. Customary Rule (p. 79)
7. Metric Rule (p. 80)
8. Coordinate axes with background grid (range -10 to $+10$) (p. 81)
9. Coordinate axes with background grid (range -15 to $+15$) (p. 82)
10. Coordinate axes with tick marks (range -10 to $+10$) (p. 83)
11. Page of coordinate axes with background grids (six per page) (p. 84)
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Student Self-Assessment Forms

13. Student Information Sheet, pages 1 and 2 (pp. 86–87)
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READING YOUR MATH TEXTBOOK

Beginning a Chapter:

- First, examine the chapter opening page or pages. Read the *Chapter Title* and *Section Titles* to determine what will be covered in this chapter.
- Read the *Chapter Review of Key Concepts* that is near the end of the chapter. The *Chapter Review of Key Concepts* lists each learning outcome of the chapter with some tips on what to remember and at least one example. Use the review as a checklist to rate your initial knowledge of the chapter's learning outcomes.
 - You can use a numerical rating for this. For example, (0) means you know nothing about this topic, (1) means you know a little but not much about this topic, (2) means you know quite a bit but there may be a few gaps, and (3) means you know this topic very well.
 - Another possible rating strategy can be a check, minus, and plus system. (✓) means you know the topic moderately well, (–) means you need to work on this topic, and (+) means you know the topic very well.

Beginning a Section:

- Read the *Section Title* and the *Learning Outcomes* for the section.
- Read the *Introductory Paragraph*.
- Locate the *Section Exercises* at the end of the section. Read the directions for each set of exercises. This will give you an idea of the type of problems you will be solving and what to look for as you read the section.
- Begin reading the section. Make notes on concepts that you do not understand or examples for which you are not able to follow the explanation. *Your notes will be the basis for questions to ask in class.*

Continuing Through the Chapter:

- Work on one learning outcome at a time. After reading and studying one learning outcome, try some of the exercises for that outcome. The Section Exercises are coded by outcomes and all the answers are in the text. Always check your answers with those in the text. Assess your understanding of each outcome, and practice or get help as you think necessary. For additional practice use MyMathLab, which requires an access code. **Be realistic with your self-assessment!**
- Work the assignments or activities required by your instructor. The answers to the odd-numbered Chapter Review Exercises are in your text, and the solutions are in the *Student Solutions Manual*.
- Continue outcome by outcome, section by section, checking your understanding as you go.

Reviewing the Chapter:

- After finishing a chapter, thumb through the entire chapter, reading the procedure boxes and the *Tip!* boxes.
- Read the *Chapter Review of Key Concepts* once more, and again rate your understanding of each outcome. *Review or get assistance as necessary.*
- Work the *Chapter Practice Test* at the end of the chapter and check your answers. The odd-numbered answers are in your text and the solutions are in the *Student Solutions Manual*. Review or get assistance as necessary. Another practice test is available in MyMathLab, which requires an access code.

Finishing the Chapter:

- Prepare for the test on the chapter. Ask your instructor which outcomes require mastery for testing purposes. Some outcomes may not require mastery and others may even be optional. Find out as much about the format and length of the test as you can. Know your instructor's expectations (Is showing all steps required? Are calculators allowed? Is there a time limit on the test? etc.).

General Tips:

- Prepare for every class meeting by previewing the material that is to be covered in class. Prepare questions that you will ask if they are not answered in the instructor's presentation or in the class discussion. Instructors will have more patience with students who have prepared for class.
- Practice an outcome until you feel confident that you understand the concept. There is an abundance of practice available to you that is specifically geared to your text (*Section Exercises*, *Chapter Review Exercises*, and *MyMathLab*). Other practice is available through generic mathematics software and other texts. Only you know when you have practiced enough, but be realistic with your self-assessment of your understanding. Practice helps you retain the information for a longer period of time, but don't wear yourself out! Finding that appropriate balance is your goal.
- Don't forget the *Glossary and Index!* As you move through the text you may forget definitions and concepts. Maybe you are not starting your study at the beginning of the text and need to review a few concepts that are in the chapters not covered. Examining the *Glossary and Index* should be your first step in accomplishing your review.
- Your ultimate goal should be to develop independent learning skills and to become as self-sufficient as possible in your study of mathematics.

Good luck on your study of mathematics!

Cheryl Cleaves
Margie Hobbs

TEAM BUILDING STRATEGIES

“Play ball!” signals the start of a baseball game. But it also signals the start of a team effort to achieve a goal—winning the game. No one player can achieve this goal alone. All the players together cannot achieve this goal if each works alone. But when players work as a team, each carrying out his or her function in a coordinated effort, then the goal can be attained.

This is why more and more businesses, industries, and colleges use teams to achieve goals. The world today is so complex, with so many variables, so many aspects to consider, that it is difficult for one person to perform every task needed to arrive at the best possible solution. Several people functioning as a team can divide the tasks among themselves and, as a group, share and discuss their findings. Together they will reach a far better solution than any single individual can.

Team Process

- You may be asked in class to achieve certain goals or to participate in a team project. Five major components make a team successful.
 - The team must first *define the tasks* it has agreed to perform. The task definitions should be accepted by and clearly communicated to all team members.
 - The team leader is responsible for *distributing tasks* among team members, keeping in mind each member’s particular expertise.
 - Each *team member performs the individual tasks* to which he or she has committed and prepares a written or oral report of the work completed.
 - The *team compiles the results* of each member’s work and uses the results to make decisions.
 - The team *prepares a comprehensive report* of its work.

Team Dynamics

Procedural needs and the role of the team leader(s) or facilitator(s). The team may involve three or more members, maybe even six to eight, and may or may not have a designated leader. If there is no leader, either elected or appointed, then team members who have strengths in the areas of need will likely surface to offer leadership as situations arise. The team leader has several “housekeeping” chores. These include *selecting a time to meet* and *securing a place to meet*. The team leader should ensure the meeting place has enough space and is comfortable and accessible for all team members. The team leader should *call team meetings* by sending advance communication regarding the time, location, and purpose of the meetings. A team member should be selected to *take meeting minutes*, taking care to record individual assignments and deadlines.

Team responsibilities. Typical responsibilities of teams include *setting goals and priorities, identifying the tasks to be performed, delegating the tasks among team members, motivating members who get behind, supporting members who lack confidence, helping members work out conflicts, keeping everyone on target*, and so on. Teams work best when tasks and responsibilities are matched to the talents of the individual members. For example, library research is best delegated to team members who are independent workers, and interviews are best delegated to team members who have strong interpersonal skills. The effectiveness of the team depends on effectively utilizing the talents of all its members and each member’s recognition of his or her worth to the team.

Commit to Team Goals

For a team to be successful, each member must be committed to the success of the team and to its goals. Each member must help the team move forward, first by completing his or her share of the work, and then by motivating other members to do the same.

Use a Meeting Agenda

As a team member or leader, you may find it helpful to use a Meeting Agenda to ensure that all necessary matters are covered at your meetings. Here are some suggestions to consider in preparing an agenda.

- Team Goals (listed)
- Call to Order (get attention)
- Introduction to Today's Meeting (purpose, etc.)
- Review of Agenda (add items, remove items, rank items)
- Reports on Individual Assignments (list reports due)
- Other Reports, Activities, or Discussions (list them)
- Project Status Review (what progress so far?)
- Follow-up Assignments (what, who, when)
- Upcoming Events (special meetings, presentations, etc.)
- Review of Action Items or Tasks Completed (what's done)
- Review of Action Items or Tasks to Be Completed (what's needed)
- Next Meeting's Agenda Items (with specific assignments so that everyone's ready)
- Special Activity for Today (if any)
- Questions and Answers (helps evaluate meeting)
- Adjournment (end meeting)

Initial Team Meeting

At an initial meeting, the team must *clarify the nature of the problem* to be solved or the task to be performed so that everyone understands the situation the same way. This is a good time to *set priorities* so that everyone knows what kinds of solutions are acceptable. If some priorities are more important than others, the team should *distinguish between the "must have" priorities and the "nice to have" priorities*. The team must then *set deadlines* for completing various parts of the team project. All team members should agree with and support these deadlines.

Individual or Pair Responsibilities

Once the problem is clear and the priorities and deadlines have been set, team members individually, or possibly in pairs, *gather the information* needed to arrive at a solution. Individuals or pairs then prepare a written or oral summary of findings and present it to the entire team.

Follow-up Team Meetings

The team will need to meet periodically to *report individual findings and share information*. When all the findings are integrated, the team members need to discuss the information and *propose solutions* to the problem. As a next step, they *evaluate each solution* to see if it meets the priorities agreed to previously. Then the *members select the best solution*. The best one is the one that meets all "must have" priorities and as many "nice to have" priorities as possible.

Document and Present Findings and Solutions

The final task for the team is to present its findings in an organized form; this may be an oral report by an individual chosen by the team, a group presentation such as a panel discussion, or a written report perhaps with different sections prepared by different members. In some cases, the presentation will consist of both a written and an oral report. In any case, the presentation of the findings should include a *statement of the problem, the method used to solve the problem, and the solution or recommendation*. An effective presentation or report is well-organized, clearly communicated, and visually attractive.

TEAM PROJECT

| | | |
|---------------|---------|------|
| Course | Project | Term |
| Team Members: | | |
| | | |
| | | |

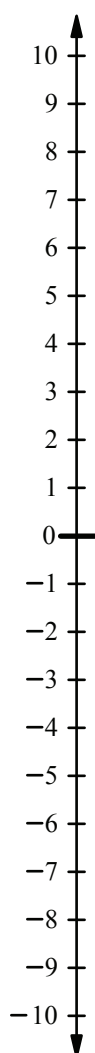
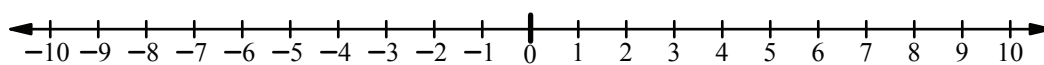
Teams will be three to four students. Each student will have a specific responsibility in the project. Peer evaluations will be part of the total project grade.

- | | | |
|----------------|---|---|
| Written Report | • | One report for each team Narrative portion of report will be three to five typed, double-spaced pages. |
| | • | Narrative portion should include: <ol style="list-style-type: none"> 1. Statement of problem 2. Method for solving problem 3. Explanation of each team member's responsibility 4. Findings 5. Conclusion |
| Presentation | • | Seven to ten minutes |
| | • | Share the five components of the written report with the class. Do NOT read the written report. Summarize the written report and use appropriate visual aids for the class. |
| | • | Presentation does not have to involve all team members but each team member must be prepared to answer questions about the project. |
| Deadlines | • | <div style="display: flex; align-items: center;"> <div style="flex: 1; border-bottom: 1px solid black; margin-right: 10px; height: 1.2em;"></div> Brief description of project, team members, and team assignments </div> |
| | • | <div style="display: flex; align-items: center;"> <div style="flex: 1; border-bottom: 1px solid black; margin-right: 10px; height: 1.2em;"></div> Draft of written report </div> |
| | • | <div style="display: flex; align-items: center;"> <div style="flex: 1; border-bottom: 1px solid black; margin-right: 10px; height: 1.2em;"></div> Final copy of written report </div> |
| | • | <div style="display: flex; align-items: center;"> <div style="flex: 1; border-bottom: 1px solid black; margin-right: 10px; height: 1.2em;"></div> Oral presentation </div> |

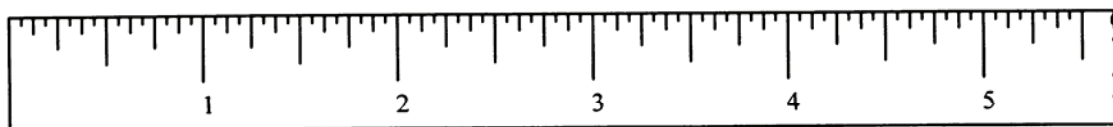
100-Cell Grid for Multiplication and Fraction Activities

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | | | | | |
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |

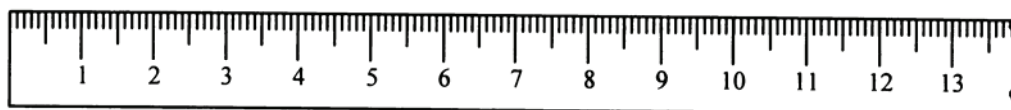
Number lines



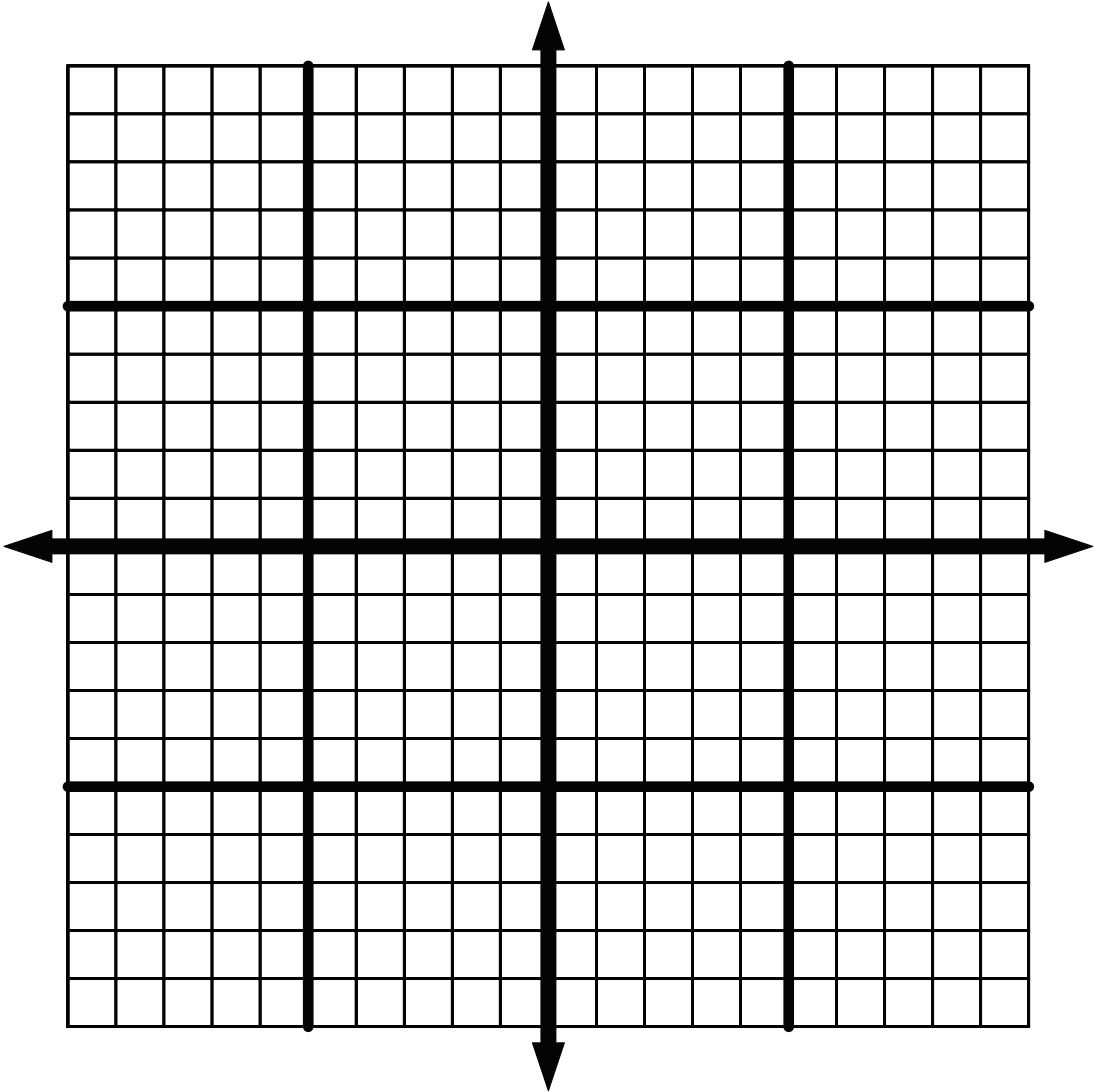
U.S. Customary rule



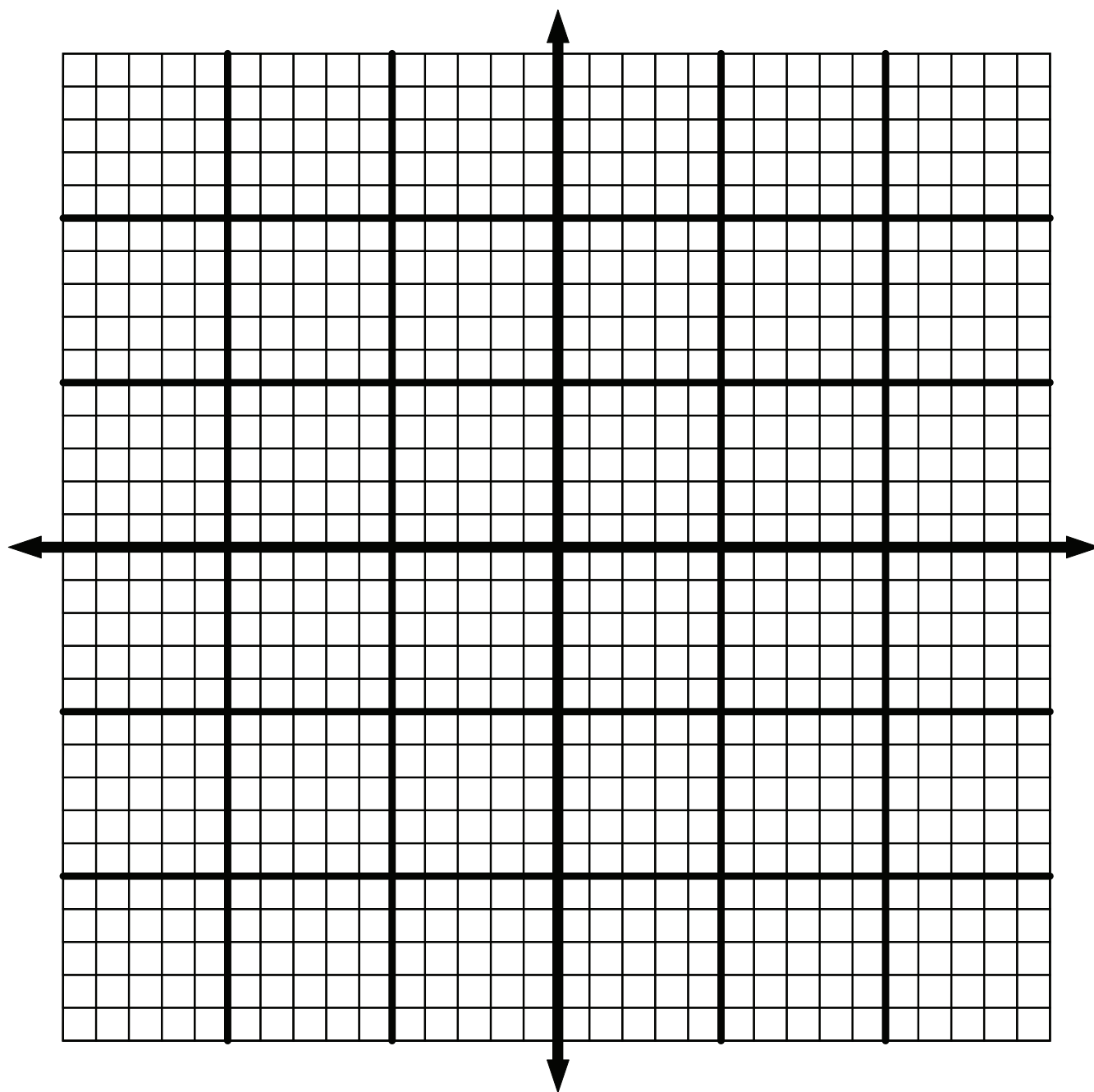
Metric rule



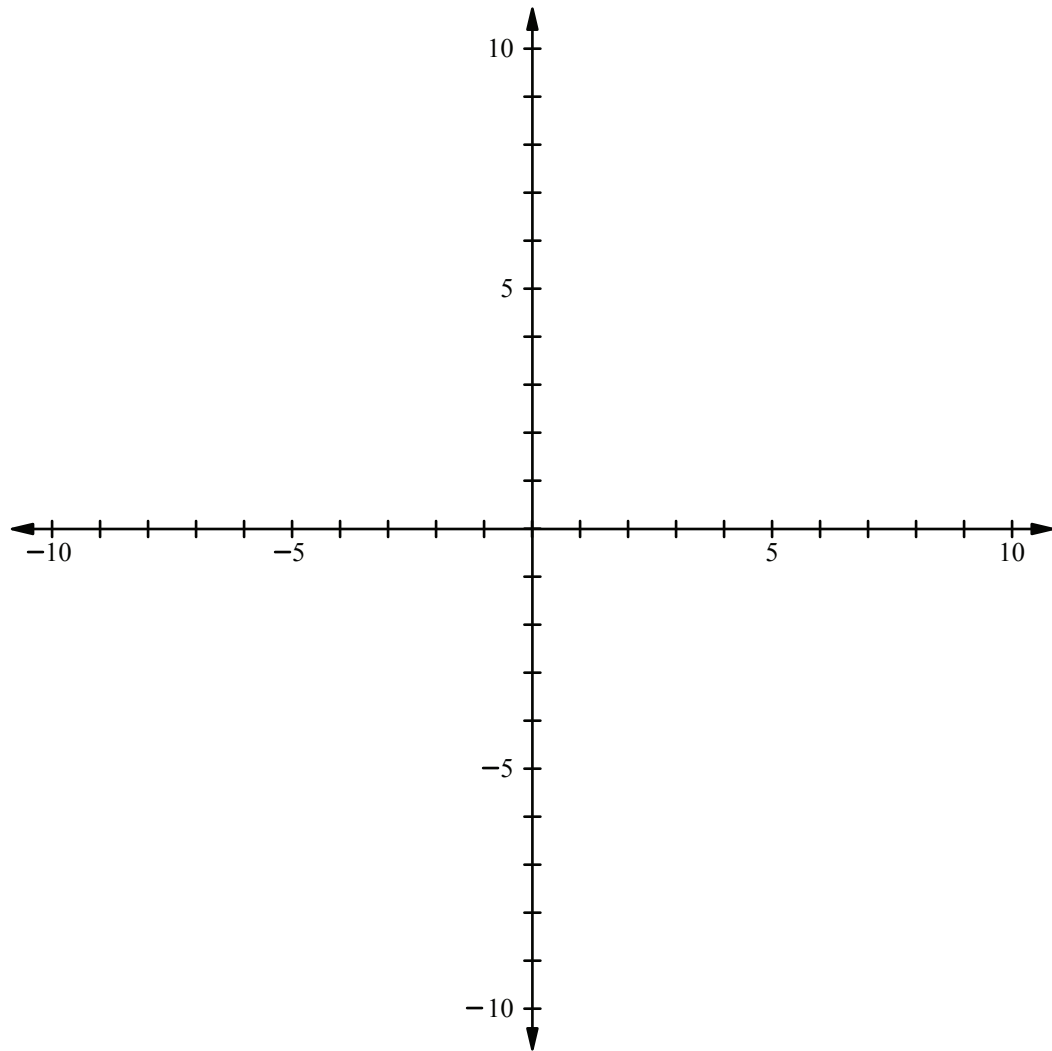
Coordinate axes with background grid (range -10 to $+10$)

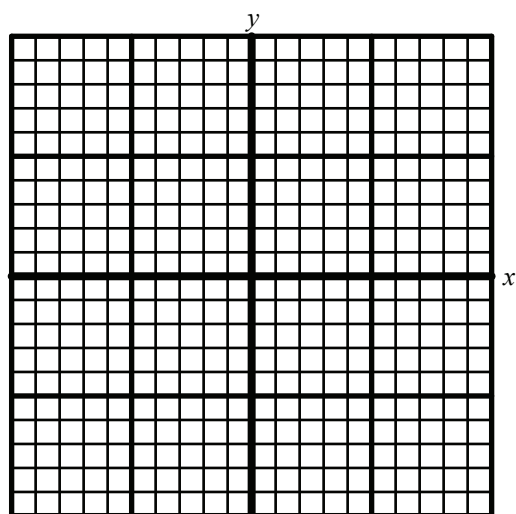
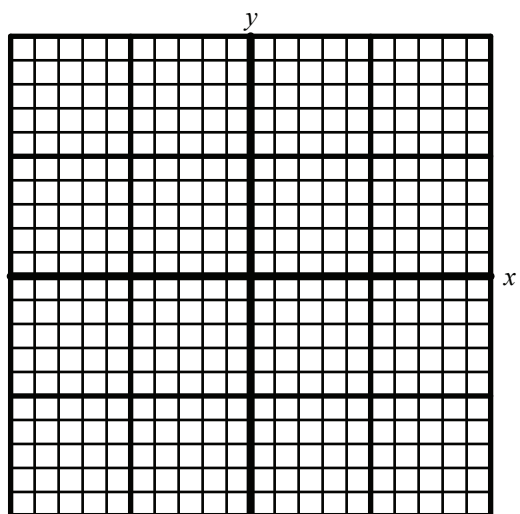
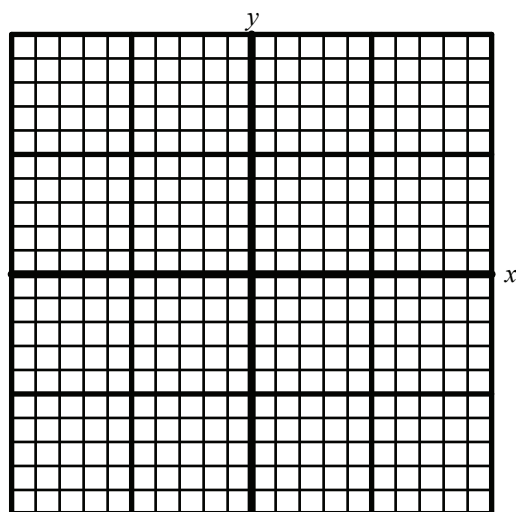
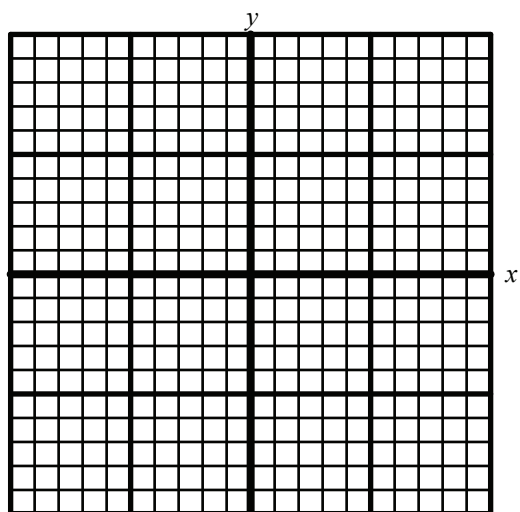
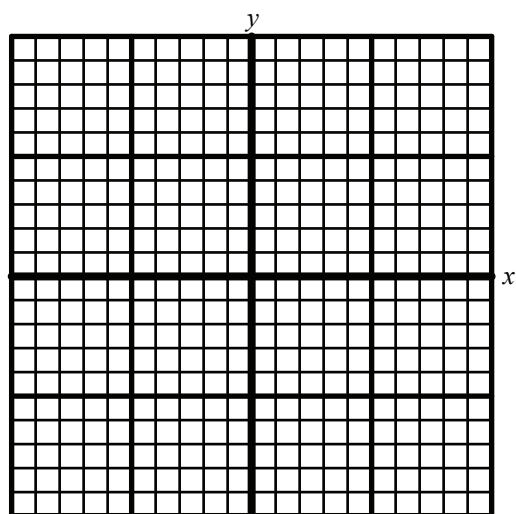
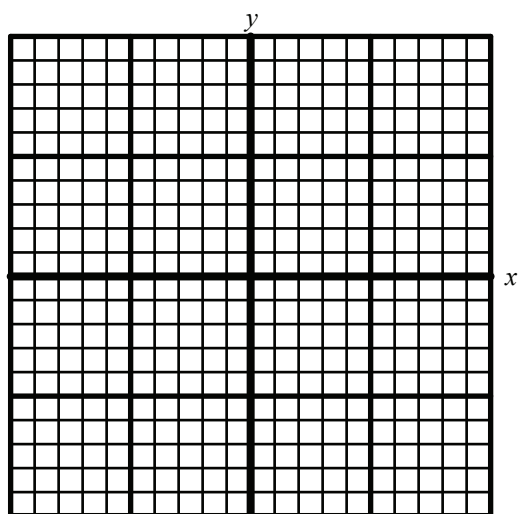


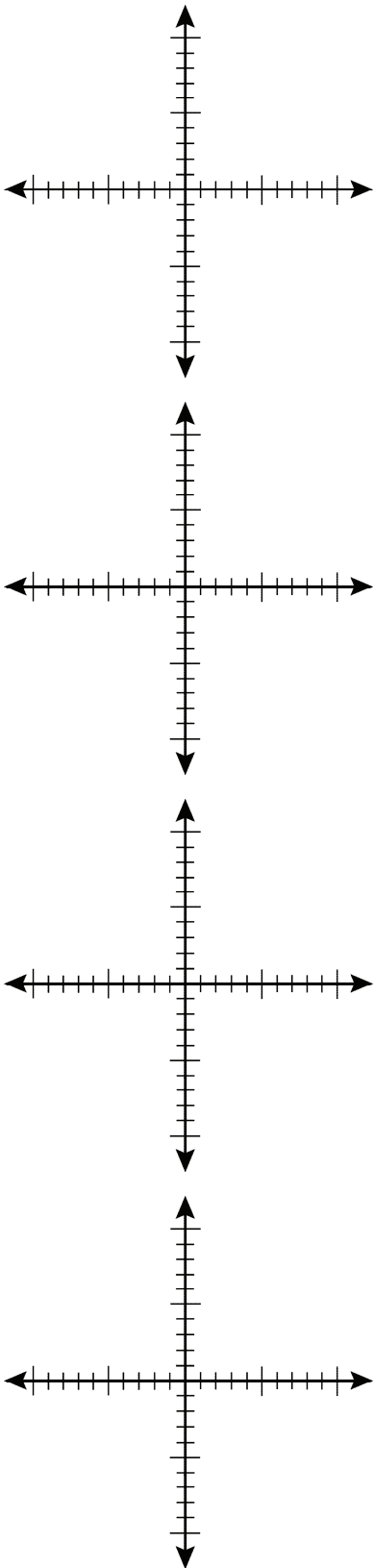
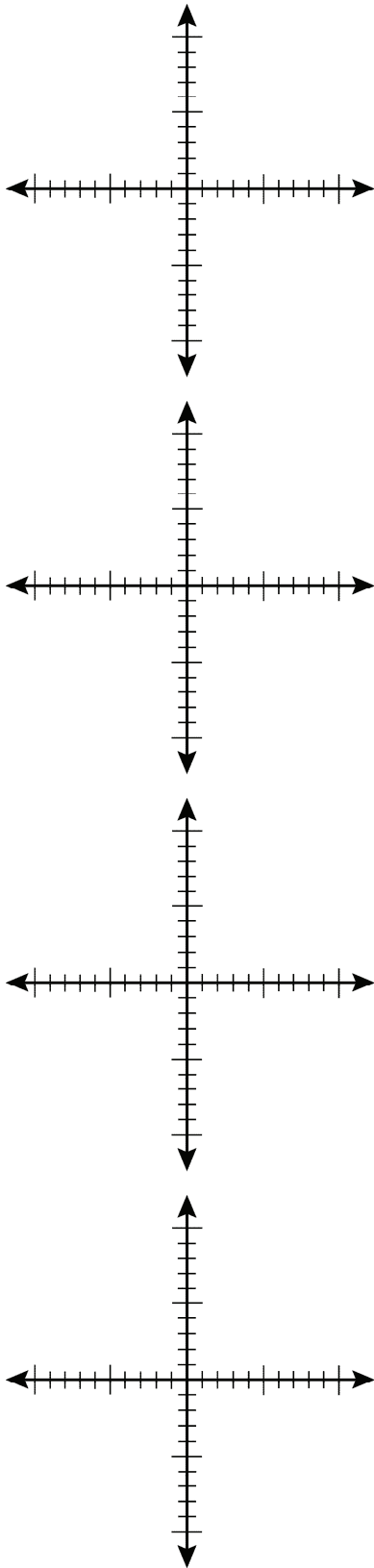
Coordinate axes with background grid (range -15 to $+15$)



Coordinate axes with tick marks (range -10 to $+10$)







Student Information Sheet

Name _____ Term _____ Course/Section _____

Address _____ City _____ State _____ Zip _____

Email _____ Phone _____

Schedule of Classes:

| Course | Days | Times |
|--------|------|-------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Work Schedule:

| | |
|-----------|--|
| Monday | |
| Tuesday | |
| Wednesday | |
| Thursday | |
| Friday | |
| Saturday | |
| Sunday | |

Other Major Commitments of Time:

| |
|--|
| |
| |
| |
| |
| |

Commitment to Studying Math Outside of Class:

| | |
|-----------|--|
| Monday | |
| Tuesday | |
| Wednesday | |
| Thursday | |
| Friday | |
| Saturday | |
| Sunday | |

Preferences for Studying (check all that apply):

- ☐ Studying alone
☐ Studying in learning center
☐ Using electronic resource such as MyMathLab
☐ Getting help from a tutor
☐ Getting help from another instructor
☐ Studying with a classmate
☐ Studying with a group of classmates
☐ Getting help from my instructor
☐ Getting help from a friend or family member

Personal Mathematics History:

| High School Courses | Final Grade | Times Enrolled |
|----------------------|-------------|----------------|
| | | |
| | | |
| | | |
| College Math Courses | Final Grade | Times Enrolled |
| | | |
| | | |

Course Grade Goal

☐ A ☐ B ☐ C

What do you personally want to learn in this course?

Attitude about Mathematics:

Weekly Progress Report

Name _____

Report Number _____

Section _____ Date _____

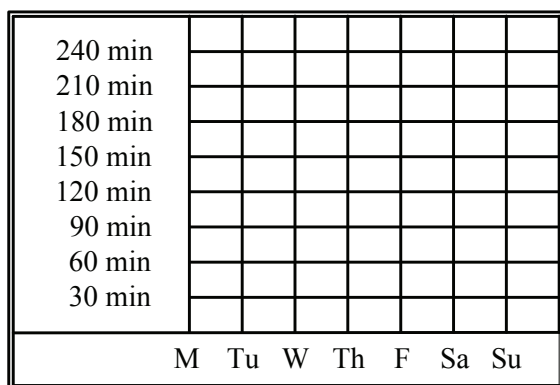
This report is a self-assessment of the progress made in the previous week.

Attendance (List dates of absences):

Assignments (List assignments not completed):

Out-of-Class Time Spent on Mathematics Assignments:

(Plot the time spent for each day and connect the points forming a line graph.)



Make calculations to complete the statements.

I spent a total of approximately _____ minutes or _____ hours studying or working out-of-class assignments in mathematics.

I spent an average of _____ minutes or _____ hours per day studying or working out-of-class assignments in mathematics.

I spent approximately _____ hours alone studying or working assignments in mathematics.

I spent approximately _____ hours studying or working assignments using an electronic resource such as MyMathLab

I spent approximately _____ hours studying or working assignments in mathematics in a resource center or with an instructor or tutor.

I spent approximately _____ hours studying or working assignments in mathematics in a study group.

Members in my study group are: _____

I understand the topics covered during this report period (Check one):

____ very well ____ somewhat ____ very little

Comments:

Instructor's Comments:

My term grade to date is approximately: _____

Random Assignment Check:

(Your instructor will give a random list of problems from your assignments to be transferred to this sheet. Show all steps of your solutions.)

Bi-Weekly Progress Report

Report Number _____

Name

Section

Date

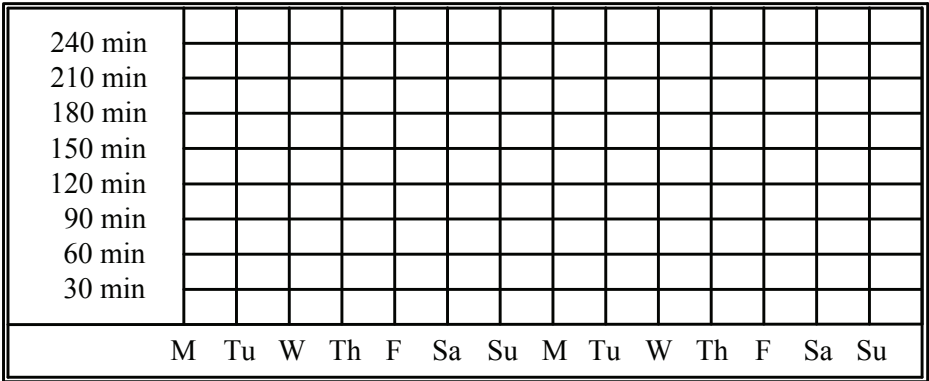
This report is a self-assessment of the progress made in the previous two-week period.

Attendance (List dates of absences.):

Assignments (List assignments not completed.):

Out-of-Class Time Spent on Mathematics Assignments:

(Plot the time spent for each day and connect the points forming a line graph.)



Make calculations and complete the statements:

I spent a total of approximately _____ minutes or _____ hours studying or working out-of-class assignments in mathematics.

I spent an average of _____ minutes or _____ hours per day studying or working out-of-class assignments in mathematics.

I spent approximately _____ hours alone studying or working assignments in mathematics.

I spent approximately _____ hours studying or working assignments using an electronic resource such as MyMathLab.

I spent approximately _____ hours studying or working assignments in mathematics in a resource center or with an instructor or tutor.

I spent approximately _____ hours studying or working assignments in mathematics in a study group.

Members in my study group are:

I understand the topics covered during this report period (Check one):

_____ very well _____ somewhat _____ very little

Comments:

Instructor's Comments:

My term grade to date is approximately: _____

Random Assignment Check:

(Your instructor will give a random list of problems from your assignments to be transferred to this sheet. Show all steps of your solutions.)

Mid-Term Self Evaluation

Name

Section

Date

Test Scores (List):

Test Average: _____

Attendance (List dates of absences):

Assignments (List assignments not completed):

Why have the assignments not been completed?

Mid-Term Grade (Calculate according to directions from your instructor): _____

Desired End-of-Term Grade: _____

What have you been doing outside of class to master the topics of the course?

What out-of-class resources have you taken advantage of?

MyMathLab _____

Study Group _____

Resource Center _____

Help from Instructor _____

Tutor _____

Other (Specify) _____

What has been the least effective study technique you have used?

What has been the most effective study technique you have used?

Evaluate the effectiveness of your total study plan.

Are you on target for your desired end-of-term grade? _____

Will you make changes in your study habits for the remainder of the term? If so, explain the changes you will make.

What can you do differently during class time to improve your progress in the course?

What could your instructor do differently during class time to improve your progress in the course?

Comments from Instructor:

Group Project Peer Evaluation

Name _____ Project _____ Course/Section _____ Date _____

*Evaluate the level of participation and the quality of work for yourself and each member of your group.
Assign scaled scores using the scale from 1 to 5 with 5 being the highest score.*

| Name | Level of Participation Score | Quality of Work Score | Comments |
|-----------------|---------------------------------|--------------------------|----------|
| Self Evaluation | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Error Analysis Form

| | | | |
|------|--------------------|---------|------|
| Name | Test or Assignment | Section | Date |
|------|--------------------|---------|------|

Use additional sheets if necessary.

| Item Number | Incorrect Solution | Corrected Solution | Error Analysis | | |
|-------------|--------------------|--------------------|------------------|-------------------|---------------------|
| | | | Conceptual Error | Calculation Error | Transcription Error |
| | | | | | |

Incorrect Solution: Enter incorrect solution exactly as it appears on test or assignment. Circle or highlight mistake or mistakes.

Corrected Solution: Show correct solution.

Error Analysis:

Conceptual Error: If error is due to misunderstanding of a concept, name the concept in question.

Calculation Error: If, in your judgment, you understood the concepts involved but you made a miscalculation, name the type of calculation error.

Transcription Error: If error resulted from the miscopying of the problem or miscopying a portion of the problem from one step to another, identify the transcription error.

