Mathematics 202
Spring Semester, 2004
Mathematics Problem-Solving for Elementary Teachers

Prerequisite: C or better in MA 201.
Times: 8-9:15 am 9:30-10:45 am
Rooms: CB 341 CB 343
Sections: 001 002
Instructor: Jessica Cunningham
Office: 702 Patterson Office Tower
Phone: 257-6804
Email: jvirgin@ms.uky.edu
Office hours: 11am-12pm MWF

Contacting me
A very good way to communicate with me regularly is by email or during office hours. Please feel free to ask me about any matter pertaining to the course. I check my email every day, excluding the weekend. There may be times when I don't get back to you within 24 hours.

Course goals
Developing problem-solving skills is a main theme of the course. Learning how to solve problems requires time and effort. Be prepared to spend 5 - 8 hours per week solving homework problems and otherwise preparing for the course.
Goal 1 (50 %) Understand the content of the course: algebra, statistics, geometry, and measurement.
Goal 2 (25%) Be able to explain the topics, at an appropriate level to an elementary (or middle) school.
Goal 3 (15%) Be familiar with the use of manipulatives and technology in the K-8 classroom. Be familiar with the content and testing of the K-8 curriculum.
Goal 4 (10 %) Use basic arithmetic and algebra skills correctly and confidently.

Course overview
We will cover most of the material from Chapters 8 through 12. A paced syllabus is included in the syllabus.

Grading policy
*12 homework assignments, 20 points each, lowest two dropped: 200 points
(2 HW assignments will involve student presentation of group work—you will not be permitted to drop these grades)
*3 evening exams, each worth 150 points. 450 points
Suppose your final exam score is K. If K/2 is greater than your lowest exam evening exam score, then K/2 will replace that lowest exam score.
*4 quizzes, each worth 20 points: lowest quiz dropped
*Final exam, worth 300 points

Final grade
A
B
C
D
E

60 points
300 points
900 or higher
800-899
700-799
600-699
below 600

Calculators
You are required to have a scientific calculator. Use of the calculator will be permitted on selected portions of quizzes and tests.

Grading the homework:
You can work with fellow students on homework. Follow these two guidelines:

a. Homework write-up but must done by you. It should not be done in the presence of anyone with you have worked on the problem(s). However you are more than welcome to work on any problem with others.

b. Homework will be turned in at the beginning of class on the date due. No late homework will be accepted unless you provide documented evidence of an illness or some other serious matter.

c. Homework will not be accepted torn out of a spiral notebook. Homework turned in with no name will receive a zero.

Each homework assignment is worth 20 points. 50% (ten points) is determined by how much of the assignment was completed in a coherent, reasonably neat manner. The other 50% is determined by the performance on problems selected for grading. Not every problem will be graded; typically 2 or 3 problems are selected for grading. Partial credit will be given for partially correct problems. Things to keep in mind:

1. The problems should be submitted in the order in which they are listed in the assignment. They should be written legibly.

2. Write first drafts for each problem, but write a final draft for submission. Points will be subtracted if it is obvious the solution needed further editing.

3. On specified problems, full-explanation problems, you will be required to provide full explanation. You will explain how you arrived at your solution and the justification(s) for each step in your procedure. The solutions should have proper English grammar and spelling.

4. For many (though not all) problems, including labeled diagram(s) is a good idea.

Attendance
Attendance is required to do well in this course. Please send me an email if you have to miss a class. If you miss a class without prior notification, please send an explanation by email.

Plagiarism, cheating
If there is reason to believe you have copied work without acknowledgement, you will be subject to academic discipline. With regard to homework cooperation, see the guidelines above.
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<th>WEEK</th>
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<td>8.1</td>
<td>Algebraic Expressions and Equations, Review of Fractions and Decimals</td>
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<td>19-Jan</td>
<td>8.2</td>
<td>Introduction to Functions; HW #1 Section 8.1 and review due 1/22</td>
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<td>26-Jan</td>
<td>8.3</td>
<td>Cartesian Coordinates, Graphing Functions; HW #2 Section 8.2 Due 1/27</td>
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<td>2-Feb</td>
<td>9.1</td>
<td>Graphical representation of data; HW #3 Section 8.3 Due 2/3; Quiz 1</td>
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<td>9-Feb</td>
<td>HW #4 Section 9.1 Due 2/10; Exam 1: 2/10, 5-7pm. (Chp 8, fractions, decimals, ratios, percents, manipulative use)</td>
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<td>9.2-9.3</td>
<td>Measures of Central tendency, deviation, statistical inference</td>
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<td>Empirical Probability; HW #5 Sections 9.2-9.3 Due 2/17</td>
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<td>Counting Techniques; HW #6 Section 10.1 Due 2/22</td>
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<td>1-Mar</td>
<td>10.3</td>
<td>Theoretical Probability; HW #7 Section 10.2 Due 3/2</td>
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<td>8-Mar</td>
<td>Exam 2 Tuesday: 3/9, 5-7pm (Chp 9 and 10)</td>
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<td>11.1-11.2</td>
<td>Points, Lines, Angles, Curves, Polygons</td>
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<td>15-Mar</td>
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<td>22-Mar</td>
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<td>3-d Geometric Figures; HW #8 Sections 11.1-11.2 Due 3/23</td>
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<td>29-Mar</td>
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<td>Networks, Intro to Geometer's Sketchpad; HW #9 Section 11.3 Due 3/30</td>
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<td>5-Apr</td>
<td>12.1-12.2</td>
<td>Measurement procedures, Area and Perimeter; HW #10 Section 11.4 Due 4/6</td>
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<td>12-Apr</td>
<td>12.3-12.4</td>
<td>Pythagorean Thm, Surface Area and Volume; HW #11 Sections 12.1-12.2 Due 4/13</td>
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<td>19-Apr</td>
<td>Exam 3 Tuesday 4/13, 5-7pm (Chp 11, 12.1-12.3) Sections 12.3-12.4 Group presentations (Thursday)</td>
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<td>26-Apr</td>
<td>Group presentations; Quiz 4; HW #12 Sections 12.3-12.4 Due 4/27</td>
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<td>REVIEW FOR FINAL</td>
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