Journal and Portfolio Assignments for Mathematics 499/599

1. Journal Assignments

There are two journal articles that you will be provided and asked to read. In addition Math 599 students (resp. Math 499 students) will be required to do a literature search and find two (resp. one) journal articles to read. For each assignment, please do the following:

- **Type** a ¾-1 page summary of the article. (Single-spaced)
- Describe in some detail the most important points or ideas of the article,
- Give your reaction to the article. In particular, answer the following questions:
    1. Did you like the article?
    2. What ideas would you carry into your classroom from this article?

The following websites are good sources for searching for journal articles:

- ERIC: http://www.eric.ed.gov/
- JSTOR: http://www.jstor.org/
- NCTM: http://www.nctm.org/publications/default.aspx?id=218

The due dates for the Journal Assignments will be as follows:

Journal 1 (*Building Bridges to Algebraic Thinking*) is due on Thursday 6/26.
Journal 2 (*Mathematics Projects Promote Students' Algebraic Thinking)* is due on Tuesday 7/1.
Journal 3 (*Journal article chosen by you*) is due Monday 7/7.
Journal 4 (*Journal article chosen by you (599 only)*) is due on Wednesday 7/9.

You will be assessed according to the following ***journal rubric***:

- **Completeness**: 0-2 (minimal or ineffective), 3-5 (some components missing), 6(complete and well-developed)
- **Clarity**: 0-2 (minimal), 3-5 (in development), 6(excellent)
- **Proper usage of language**: 0-2(in development), 3(easy to read and flawless)
- **(applies to Journals chosen by student only) Appropriateness**: Relates to middle school algebra/problem solving. 0 (not at all) 1 (somewhat) 2 (very appropriate)

2. Portfolio Assignments

There will be **four** portfolio assignments for Math 599 students and **three** for Math 499 students. The purpose of the portfolio problems is to illustrate a particular type of problem and strategy. These problems should be appropriate for middle school students and have at least three mathematical steps to them. Include with each problem a solution that would receive a perfect score according to the class rubric. Try to make the problems interesting and relevant to children's lives.

Have fun and use your imagination! Write these problems ON YOUR OWN, without borrowing from other resources.

INSTRUCTIONS: Write your own multi-step story problem that illustrates the following types of problems/strategies. (Math 499 students choose 3 of 4)

a. **Portfolio 1** due on Wednesday 6/25: Draw a diagram, look for a pattern, or use guess and check (non-formal algebra).
b. **Portfolio 2** due Monday 6/30: Make a table, extend a pattern, or guess and check (formal algebra must be a component).
c. **Portfolio 3** due Wednesday 7/2: ratios, percentages, work, or graphs (formal algebra must be a component).
d. **Portfolio 4** due Tuesday 7/8: system of equations (formal algebra must be a component).
e. **Your last portfolio problem must include a reflection on the class rubric together with a modified rubric: after using the class rubric for the first portfolios, suggest some modifications and improvements for a general rubric for algebraic word problems. (10 additional points)**

Please organize your writing in the following format: **Problem, Solution, Comments for Teachers**. The **Comments for Teachers** section can include ideas for (a) extending or generalizing the problem, or (b) reflective comments about which topics this problem illustrates within the middle school mathematics curriculum.

The entire portfolio problem is assessed on a scale of 20 points.

Problem: Ten (12) points are given for this section of the assignment which contains the wording of the actual problem:

- Two (3) points are given for writing a problem that illustrates the type of problem or strategy given.
- Two (2) points are given for writing a problem that illustrates an important mathematical idea.
- Two (3) points are given for writing a multi-step problem that uses at least 3 steps.
- Two (2) points are given for an interesting story.
- Two (2) points are given for clarity and good use of language.

The remaining six (8) points are assigned as follows:

- Six (6) points for a complete and correct **solution** that would receive full credit according to the class rubric (or your modified rubric for the last portfolio).
- Two (2) points for the **Comments for Teachers** section.