Analyzing Numerical Data: Indices Using Weighted Sums and Averages
I.C Student Activity Sheet 6: Final Grade Averages

When a *weighted average* is applied to a set of numbers, more importance (weight) is placed on some components of the set. Your final average in this class is probably an example of a weighted average.

Consider two grading systems for determining your final class average. Each system is a weighted average of measures that include test grades, final exam grade, homework, and class participation.

Grading System I	Grading System II
Test average—40%	Test average—60%
Final exam grade—25%	Final exam grade—15%
Homework—25%	Homework—15%
Class participation—10%	Class participation—10%

1. If your values are the following, which grading system do you prefer and why?

   - Test average = 84
   - Final exam grade = 68
   - Homework = 90
   - Class participation = 95

2. If you score 10 points higher on the final exam, how does your final grade average change under each system?

3. If you score 6 points lower on the final exam, how does your final grade average change under each system? Which system is better for you?

4. Use the following information to find your final course average in each grading system:

   - Test grades {80, 74, 82, 88}
   - Final exam grade = 84
   - Homework = 90
   - Class participation = 95

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5. Your averages and values are the following:

- Test average = 85
- Homework = 90
- Participation = 95

What grade do you need on the final exam to earn a final grade average of at least 87 in each grading system?

6. REFLECTION: What weights would you assign to each component to set up a grading system? Each weight must be at least 10%. Why do you think your grading system would be fair and effective?

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