

# CHAPTER 1 PROJECT

## Polynomials



A chemistry professor calculates final grades for her class using the polynomial

$$A = 0.3f + 0.15h + 0.4t + 0.15p,$$

where  $A$  is the final grade,  $f$  is the final exam,  $h$  is the homework average,  $t$  is the chapter test average, and  $p$  is the semester project.

The following is a table containing the grades for various students in the class.

| Name      | Final Exam | Homework Avg. | Test Avg. | Project |
|-----------|------------|---------------|-----------|---------|
| Alex      | 77         | 95            | 79        | 85      |
| Ashley    | 91         | 95            | 88        | 90      |
| Barron    | 82         | 85            | 81        | 75      |
| Elizabeth | 75         | 100           | 84        | 80      |
| Gabe      | 94         | 90            | 90        | 85      |
| Lynn      | 88         | 85            | 80        | 75      |

1. Find the final grade for each student, rounded to one decimal place.
2. Who has the highest total score?
3. Why is the final grade raised more with a grade of 100 on the final exam than with a grade of 100 on the semester project?
4. Assume you are a student in this class. With one week until the final exam, you have a homework average of 85, a test average of 85, and a 95 on the semester project. What score must you make on the final exam to achieve at least a 90.0 overall? Round your answer to one decimal place.