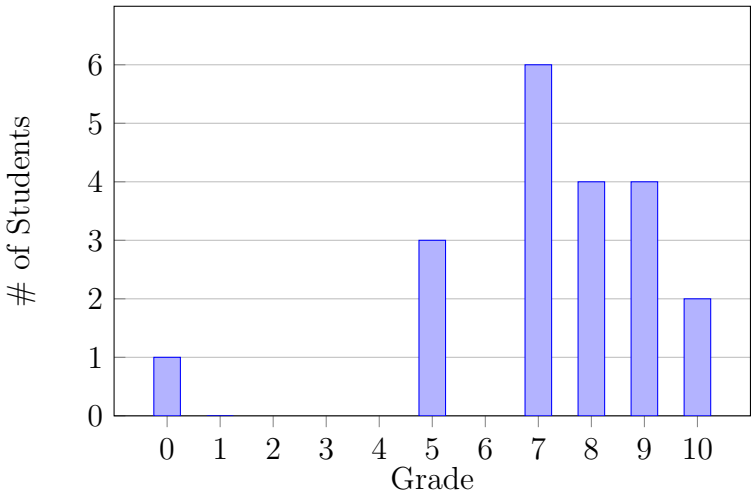
Expected Value & Weighted Averages **Workshop**

1. The scoring for a college course is given in the following table. Suppose that Paul got a 71 on the midterm, Paul has an 87 average on the quizzes and Paul gets a 79 on the final exam. What is Paul's final average for the course?

	Midterm Exam	Quizzes	Final Exam
Percent of Grade	20%	50%	30%
Paul's Grades	71	87	79

2. Professor Smith is teaching three sections of statistics. Section 1 has 20 students, section 2 has 30 students and section 3 only has 10 students. The average grade on the final exam was 80 in section 1, 74 in section and 92 in section 3. What is the average final exam grade for all of Professor Smith's statistics students?

3. 20 students in a class got the following quiz grades.



Express the mean quiz grade as a weighted average where the weights are the proportions of students with each grade. Then compute the mean.

4. An elementary school is selling raffle tickets to raise money. Suppose there are 1,000 raffle tickets. Ten tickets will be drawn at random and the people with those tickets will each get a $25 gift card. In addition, one raffle ticket will win the grand prize which is a $100 gift card.

   (a) Make a table that shows the possible outcomes and corresponding probabilities for one raffle ticket.

   (b) What is the expected value of a single raffle ticket?

   (c) If the school sells the tickets for $1 each, will it raise more money than it spends on prizes?

5. Suppose you spend $1,000 on car insurance every year. Is the expected amount of money you will get back from the insurance company each year greater than or less than $1,000? Explain.