



Instructions: Bubble in your answers on the answer sheet. Be sure to erase all mistakes completely. You do not need to bubble in leading zeros – the answer of “7” does not need to be answered as “007”. If your answer is a fraction like $\frac{3}{16}$, bubble in 316. For decimal answers like 3.14, bubble in 314.

1. **2 points:** If a card is randomly chosen from a standard deck of 52 cards, what is the probability that the card will be a king or a diamond? **Express your answer as a reduced fraction.**
2. **2 points:** Mr. and Mrs. Smith wanted to have a bit of fun naming their first child, so they decided to choose the letters for their child's name randomly. The only requirements they had for the name were that it is three letters long, that the first and last letters are vowels (a, e, i, o, or u), and that the middle letter is a consonant. How many unique names could that poor child have been given?
3. **2 points:** In order to complete a project on healthy eating, a high school student surveyed a middle school class. Out of the class of 30 students, 10 said they like fruits, 18 said they like vegetables, and 6 said they do not like fruits or vegetables. How many students like both fruits and vegetables?
4. **3 points:** In a test at Math High, 30 students scored 80% and 20 students scored 95%. What was the average for these students? **Express your answer to the nearest percent.**
5. **3 points:** Suppose that Larry makes 30% of his free throws, Christian makes 50% of his free throws, and Lisa makes 40% of her free throws. What is the probability that exactly two of the three players will make their next free throw? **Express your answer to the nearest percent.**
6. **3 points:** What is the positive difference between the mean and median age in a group of teachers whose ages are 22, 28, 61, 45, 45, 38, 29, and 44? **Express your answer to the nearest whole number.**
7. **3 points:** In how many ways can the letters in *CENSUS* be uniquely arranged?
8. **4 points:** In how many ways can a math team consisting of four students be selected from a class of ten students?
9. **4 points:** A math class is made up of 12 sophomores, 8 of which are female, and 28 juniors, 14 of which are female. What is the probability that a randomly selected student will be a junior, given that the student is male? **Express your answer as a reduced fraction.**
10. **4 points:** If two fair six-sided dice are rolled, what is the probability that the absolute value of the difference will be less than or equal to two? **Express your answer as a reduced fraction.**