

Name: \_\_\_\_\_

**Problem 1:** It has been estimated that only 40% of students actually do their homework on a regular basis. Suppose you randomly survey 35 students in a class. You're interested in the number who regularly complete their homework.

- a. What type of distribution is being described? [0.5 points]
  
  
  
  
  
  
  
  
  
  
- b. In words, define the random variable  $X$ . [1 point]
  
  
  
  
  
  
  
  
  
  
- c. List the values that  $x$  could be. [1 point]
  
  
  
  
  
  
  
  
  
  
- d. Use a calculator to find the probability that at most 10 residents out of the 25 who participated in the survey regularly complete their homework. [4 points]

**Problem 2:** A recent survey of 400 students found that 80 students out of 400 eat breakfast four times per week, 130 students eat breakfast three times per week, 36% of students eat breakfast twice a week, 28 students eat breakfast once a week, and 24% of students do not have time to eat breakfast.

- a. Complete the probability table below. [4.5 points]

<b>x = Number of Breakfasts Eaten Per Week</b>	<b>P(x) = Probability (to the nearest hundredth)</b>
4	
3	
2	
1	
0	
Total:	

- b. Does the distribution represent a probability distribution? Why or why not? Use complete sentences to justify your reasoning. [1.5 points]
- c. Find the expected value for the problem. [1.5 points]
- d. Describe, in words, what the expected value means in relation to the given problem. [1 point]

This assignment will be recorded as a **Written Quiz** grade out of **15 points**.  
Submissions may be typed or handwritten and submitted as a picture/PDF.

**All submissions must have the student's name written on the actual work page.**