1. Each person in a group of students was identified by his or her hair color and then asked whether he or she preferred taking classes in the morning, afternoon, or evening. The results are shown in the table below. Find the probability that a student preferred morning classes given he or she has blonde hair.

| Preference | Blonde | Brunette | Redhead |
|---|---|---|---|
| Morning | 45 | 25 | 20 |
| Afternoon | 30 | 5 | 50 |
| Evening | 40 | 10 | 15 |

[A] $\frac{1}{17} \approx 0.059$      [B] $\frac{1}{2} = 0.5$

[C] $\frac{2}{3} \approx 0.667$      [D] $\frac{9}{23} \approx 0.391$

[1] _____

2. A class of 40 students has 11 honor students and 12 athletes. Three of the honor students are also athletes. One student is chosen at random. Find the probability that this student is an athlete if it is known that the student is not an honor student.

[A] $\frac{9}{29} \approx 0.31$      [B] $\frac{3}{10} = 0.3$

[C] $\frac{12}{29} \approx 0.414$      [D] $\frac{1}{29} \approx 0.034$

[2] _____

3. A small manufacturing company has rated 80% of its employees as satisfactory (S) and 20% as unsatisfactory (S'). Personnel records show that 70% of the satisfactory workers had previous work experience (E) in the job they are now doing, while 25% of the unsatisfactory workers had no work experience (E') in the job they are now doing. If a person who has had previous work experience is hired, what is the approximate probability that this person will be an unsatisfactory employee?

[A] $\frac{15}{71} \approx 0.211$      [B] $\frac{5}{16} \approx 0.313$

[C] $\frac{2}{7} \approx 0.286$      [D] $\frac{96}{121} \approx 0.793$

[3] _____

4. The probability that a city bus is ready for service when needed is 85%. The probability that a city bus is ready for service and has a working radio is 64%. Find that the probability that a random bus has a working radio given that it is ready for service.

[A] cannot be determined      [B] 132.8%

[C] 21%      [D] 75.3%

[4] _____

5. Compare the quantity in Column A with the quantity in Column B.
$P(A \text{ and } B) = 0.27$, $P(A) = 0.7$, $P(B) = 0.4$

| Column A | Column B |
|---|---|
| $P(A \mid B)$ | $P(B \mid A)$ |

[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

[C] The two quantities are equal.

[D] The relationship cannot be determined on the basis of the information supplied.

[5] _____

[1] D_____

[2] A_____

[3] A_____

[4] D_____

[5] A_____