

Elementary Statistics

Name: _____

Study Guide 11

Class: _____

Due Date: _____

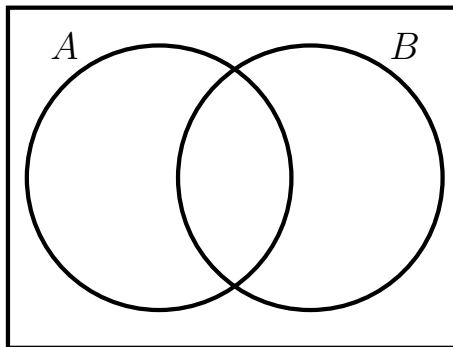
Score: _____

Your solutions must be consistent with class notes & resources.

Be Neat, Organized, and No Work \Leftrightarrow No Points

1. Given: $P(A) = 0.45$, $P(B) = 0.65$, and $P(A \text{ and } B) = 0.25$.

(a) (3 points) Construct the Venn diagram.



(b) (2 points) Find $P(\bar{A})$

(b) _____

(c) (2 points) Find $P(\overline{A \text{ and } B})$

(c) _____

(d) (2 points) Find $P(A \text{ or } B)$

(d) _____

(e) (2 points) Find $P(A \text{ only or } B \text{ only})$

(e) _____

2. Given: $P(A) = 0.55$, $P(B) = 0.75$, and $P(A \text{ or } B) = 0.85$.

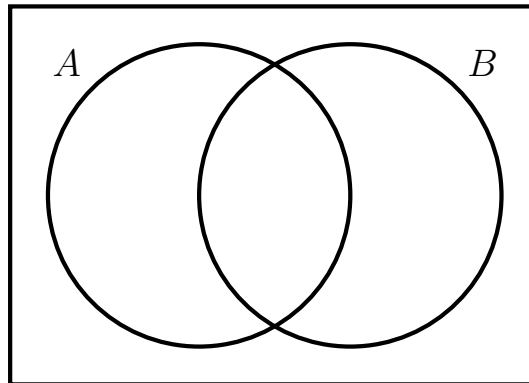
(a) (2 points) Find $P(\overline{A \text{ or } B})$

(a) _____

(b) (2 points) Find $P(A \text{ and } B)$

(b) _____

(c) (3 points) Construct the Venn diagram.



(d) (2 points) Find $P(A \text{ or } B \text{ but not both})$

(d) _____

3. Given: $P(A) = 0.35$, $P(B) = 0.45$, and A and B are mutually exclusive events. Find

(a) (2 points) $P(A \text{ and } B)$

(a) _____

(b) (2 points) $P(A \text{ or } B)$

(b) _____

4. Given: $P(A) = 0.15$, $P(B) = 0.75$, and A and B are disjoint events.

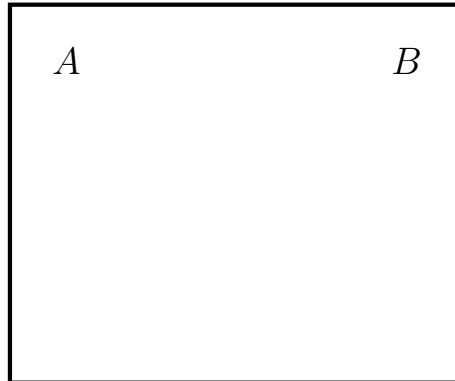
(a) (2 points) Find $P(A \text{ and } B)$

(a) _____

(b) (2 points) Find $P(\overline{A \text{ and } B})$

(b) _____

(c) (3 points) Complete the Venn diagram below.



(d) (2 points) Find $P(\overline{B})$

(d) _____

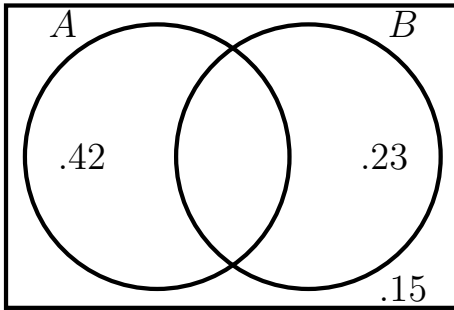
(e) (2 points) Find $P(A \text{ or } B)$

(e) _____

(f) (2 points) Find $\frac{P(A)}{P(\overline{A})}$ in reduced fraction.

(f) _____

5. (2 points) Complete the Venn diagram given below,



(a) (3 points) Use the Venn diagram and De Morgan's law to find $P(\overline{A} \text{ and } \overline{B})$.

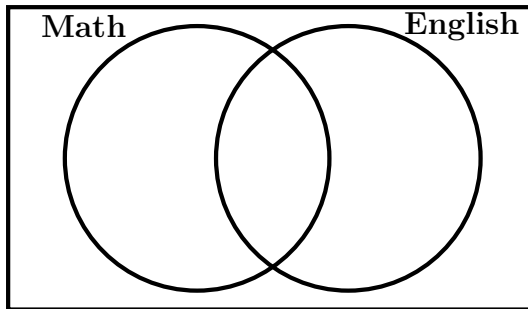
(a) _____

(b) (3 points) Use the Venn diagram and De Morgan's law to find $P(\overline{A} \text{ or } \overline{B})$.

(b) _____

6. In a survey of 50 students, 38 students were taking math or English class while 12 of them were taking both classes and 7 were taking only math class.

(a) (3 points) Use this information to construct the Venn Diagram with the probability for the number of students in each region.



(b) (2 points) What is the probability of selecting one of these students who is taking only one of these classes, not both?

(b) _____

Growth comes from mistakes, we can learn from them.