

SOLUTIONS

In-class Assignment #1 Introduction to Statistical Methods (201-922-DW)

8 September 2016

Instructor: Émilie Richer
worth 2% of final grade

(to be handed in at the end of class)

Consider the following sample space S and events A, B, C, D, E :

$S = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15\}$

$A = \{\text{even numbers}\}$

$B = \{\text{odd numbers}\}$

$C = \{\text{prime numbers}\}$

$D = \{\text{numbers divisible by 2 or 3}\}$

$E = \{\text{numbers divisible by 2 and 3}\}$

[Question 1]

List the elements of each of the following events:

$$A = \{2, 4, 6, 8, 10, 12, 14\}$$

$$B = \{1, 3, 5, 7, 9, 11, 13, 15\}$$

$$C = \{2, 3, 5, 7, 11, 13\}$$

$$D = \{2, 3, 4, 6, 8, 9, 10, 12, 14, 15\}$$

$$E = \{6, 12\}$$

$$A \cap B = \emptyset$$

$$A \cup C = \{2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14\}$$

$$A \cap E = \{6, 12\}$$

$$B \cap D = \{3, 9, 15\}$$

$$C \cap D = \{2, 3\}$$

$$A \cap (C \cup D) = \{2, 4, 6, 8, 10, 12, 14\}$$

$$B \cap C = \{3, 5, 7, 11, 13\}$$

[Question 2]

Construct a Venn Diagram including the events A, B, C

[Question 3]

Construct a Venn Diagram including events B, C, D

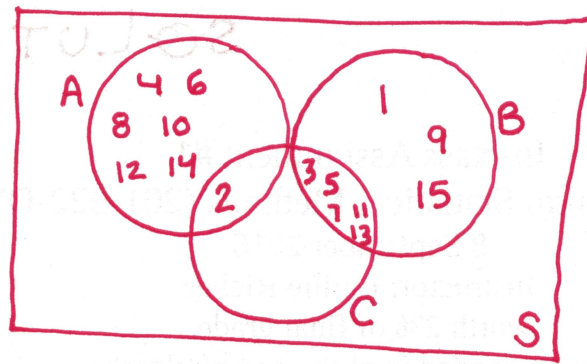
[Question 4]

Construct a Venn Diagram with events A, D, E

[Question 5]

Construct a Venn Diagram including all events A, B, C, D, E

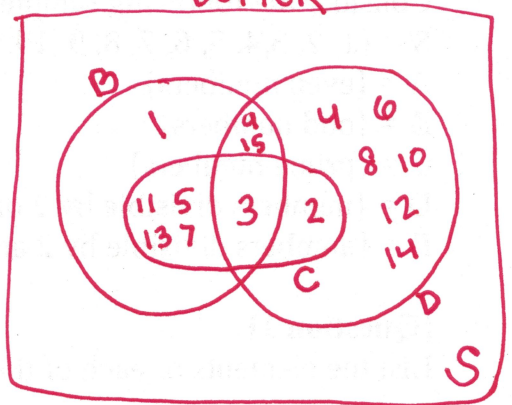
Question 2.



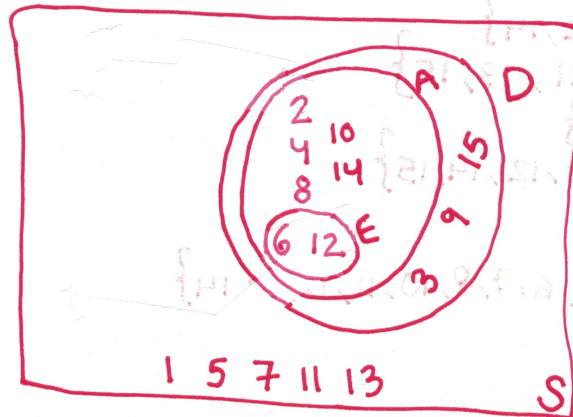
Question 3.



BETTER



Question 4.



Question 5.

