Name_____

Date_____

Advanced Algebra

Unit 8 Probability- Independent Assignment #15

A and B are Independent Events if and only if P(A∩ B) = P(A)*P(B)
A and B are Mutually exclusive if P(A∩ B) $= 0$

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1) Events A and B have probabilities P(A) = .4 , P(B) = .65 and P(A∪B) = .85

a) Calculate P (A∩B)   (2marks)

b) Draw the Venn Diagram to represent this scenario   (2 marks)

c) State with support if A and B are Independent   (2marks)

d) State with a reason if A and B are mutually exclusive   (2marks)

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2) Events A and B have probabilities P(A) = .52 , P(B) = .72 and P(A∪B) = .92

a) Calculate P (A∩B)   (2marks)

b) Draw the Venn Diagram to represent this scenario   (2 marks)

c) State with support if A and B are Independent   (2marks)

d) State with a reason if A and B are mutually exclusive   (2marks)

3) If P(A) = .4   P(A∪B) = .9 and P(A∩B) = .1, Find P(B)

Write your answer here P(B)

4) P(X) = .6   P(Y) =.5 and P(X∪Y) =.9   find P(X∩ Y)

Write your answer here P(X∩ Y)

5) Tickets numbered 1 to 15 are placed in a hat, and one ticket is chosen at random. Let A be the event that the number drawn is greater than 11, and B be the event that the number drawn is less than 8.

Draw a Venn Diagram

Find P(A)   P(B)   P(A∪B)   Are A and B Mutually exclusive?

6) In a class of 40 students, 34 like bananas, 22 like pineapple, and 2 dislike both fruits. A student is randomly selected.

Draw the Venn Diagram

Write answer a) here

Find the probability that

a) the student likes both fruits

b) Likes at least one fruit

c) Likes bananas given than he or she likes pineapple

d) dislikes pineapple given that he or she likes banana

Write answer b) here

Write answer c) here

Write answer d) here