

ECE 341 - Homework #5

Geometric, Pascal. Due Tuesday, May 25th

Please make the subject "ECE 341 HW#5" if submitting homework electronically to Jacob_Glower@yahoo.com (or on blackboard)

Problem 1 & 2) Let

- A be the number of times you roll a 6-sided die until you roll a 1 ($p = 1/6$)
- B be the number of times you roll an 6-sided die until you roll a 1 or 2 ($p = 1/3$)

- 1) Determine the pdf of $A + B$ using convolution.
- 2) Determine the pdf of $A + B$ using z-transforms.

Problem 3 & 4: Let

- A be the number of times you roll a 4-sided die until you roll a 1 ($p = 1/4$)
- B be the number of times you roll a 6-sided die until you roll a 1 ($p = 1/6$)
- C be the number of times you roll an 8-sided die until you roll a 1 ($p = 1/8$)

- 3) Determine the pdf of $A + B + C$ using convolution.
- 4) Determine the pdf of $A + B + C$ using z-transforms.