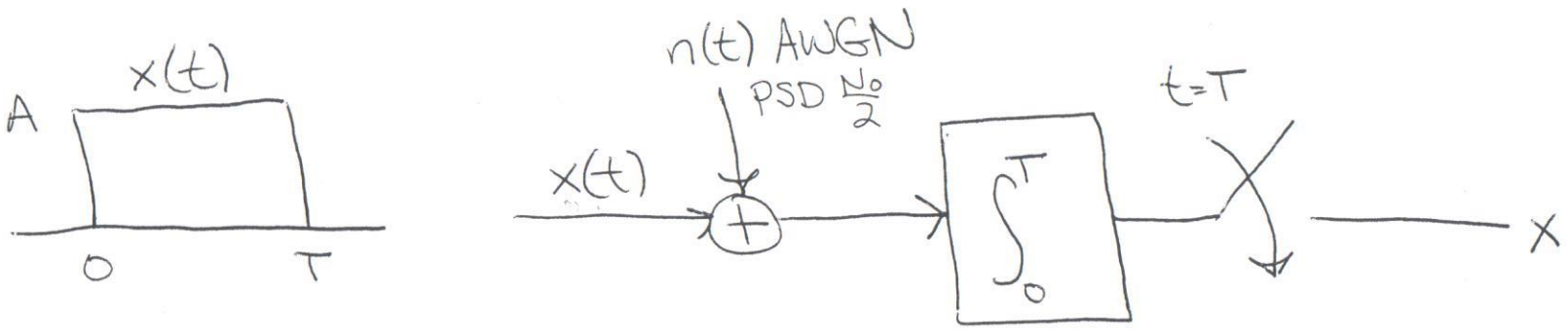
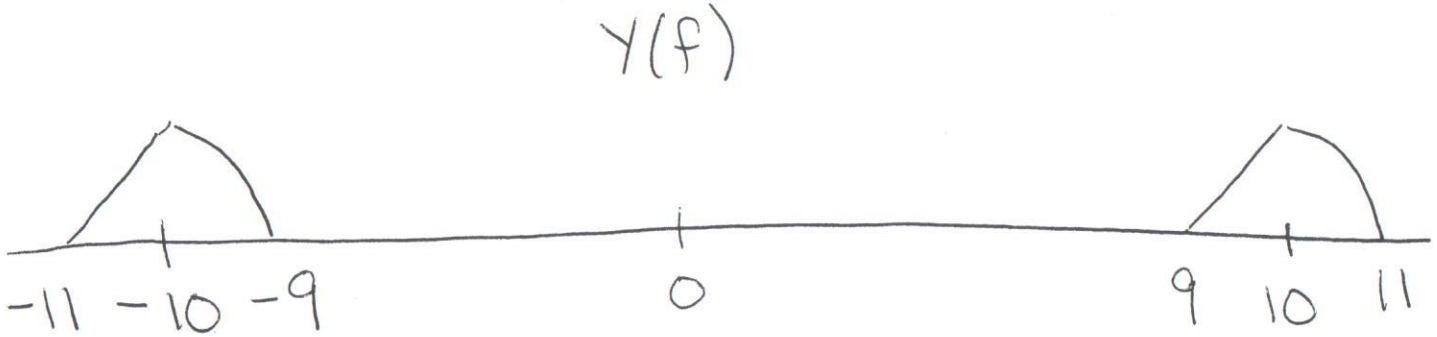
Andrea Goldsmith 2015 quals



- What is X?
- What is $p(x<0)$?
- If $A=\pm 1$, how would you determine its value from X?



- What is the minimum sampling rate at which you can recreate $y(t)$ from its samples

- How would you reconstruct $y(t)$ from these samples?

Let X and Y be independent random variables

$$X \sim \cup[0,3], \quad Y \sim \cup[-4,4]$$

- What is $p(X+Y<0)$?
- How does your answer change if $p(x,y) \neq p(x)p(y)$