

# Homework 2

Math 483 Fall 2019

due: Sept. 3 by 5pm

## Problems from the Book

Chapter 2: 4, 16, 21

### Problem A.

For  $X \sim \mathcal{N}(\mu = 5, \sigma^2 = 12)$ , find

- (a)  $P(X > 9)$
- (b)  $P(3 < X < 9)$
- (c)  $x$  such that  $P(X > x) = 0.14$
- (d) two points  $a, b$  such that  $P(a < X < b) = 0.88$ .

### Problem B.

Suppose that  $X, Y$  are independent, **Uniform** $[0, 1]$  random variables. Find the density of  $W = X + Y$  [**Hint:** Consider cases  $W < 1$ ,  $W > 1$  separately.]