

Quiz 1

Prepared on January 21, 2016

Name: _____

Let X be a discrete random variable with $\Pr\{X = x\} = cx$ for positive, odd integers $x = 1, 3, 5$; otherwise, the probability is zero.

1. Calculate the value of c .

Solve c such that

$$c + 3c + 5c = 1.$$

Then $c = 1/9$.

2. What is the expected value of $\min(X, 4)$?

x	1	3	5
$\Pr(X = x)$	1/9	3/9	5/9
$4 \wedge x$	1	3	4
$(4 - x)^+$	3	1	0

Thus

$$E[4 \wedge X] = 1(1/9) + 3(3/9) + 4(5/9).$$

3. What is the expected value of $(4 - X)^+$?

$$E[(4 - X)^+] = 3(1/9) + 1(3/9) + 0(5/9).$$