Feedback — Quiz 1

Help Center

Thank you. Your submission for this quiz was received.

You submitted this quiz on **Mon 7 Dec 2015 12:47 PM PST**. You got a score of **5.00** out of **6.00**. You can attempt again, if you'd like.

Question 1

Consider influenza epidemics for two parent heterosexual families. Suppose that the probability is 17% that at least one of the parents has contracted the disease. The probability that the father has contracted influenza is 12% while the probability that both the mother and father have contracted the disease is 6%. What is the probability that the mother has contracted influenza?

(Hints look at lecture 2 around 5:30 and homework question on page 3/10).

Your Answer		Score	Explanation
11%	✔	1.00	
5%			
6%			
17%			
Total		1.00 / 1.00	

Question 2

A random variable, X is uniform, a box from 0 to 1 of height 1. (So that its density is $f(x) = 1$ for $0 \leq x \leq 1$.) What is its 75th percentile?

(Hints, look at lecture 2 around 21:30 and homework 1 page 4/10. Also, look up the help function for the qunif command in R.)

Your Answer		Score	Explanation
0.25			
0.50			
0.75	✔	1.00	
0.10			
Total		1.00 / 1.00	

Question 3

You are playing a game with a friend where you flip a coin and if it comes up heads you give her X dollars and if it comes up tails she gives you Y dollars. The probability that the coin is heads is p (some number between 0 and 1.) What has to be true about X and Y to make so that both of your expected total earnings is 0. The game would then be called "fair".

(Hints, look at Lecture 4 from 0 to 6:50 and Homework 1 page 5/10. Also, for further reading on fair games and gambling, start with the Dutch Book problem).

Your Answer		Score	Explanation
$\frac{p}{1-p} = \frac{Y}{X}$	✔	1.00	
$\frac{p}{1-p} = \frac{X}{Y}$			
$X = Y$			
$p = \frac{X}{Y}$			
Total		1.00 / 1.00	

Question 4

A density that looks like a normal density (but may or may not be exactly normal) is exactly symmetric about zero. (Symmetric means if you flip it around zero it looks the same.) What

is its median?

(Hints, look at quantiles from Lecture 2 around 21:30 and the problem on page 9/10 from Homework 1.)

Your Answer		Score	Explanation
◉ The median must be 1.	✖	0.00	
○ We can't conclude anything about the median.			
○ The median must be different from the mean.			
○ The median must be 0.			
Total		0.00 / 1.00	

Question 5

Consider the following PMF shown below in R

```
x <- 1:4
p <- x/sum(x)
temp <- rbind(x, p)
rownames(temp) <- c("X", "Prob")
temp
```

```
##      [,1] [,2] [,3] [,4]
## X     1.0  2.0  3.0  4.0
## Prob  0.1  0.2  0.3  0.4
```

What is the mean?

(Hint, watch Lecture 4 on expectations of PMFs and look at Homework 1 problem on page 10/10 for a similar problem calculating the variance.)

Your Answer		Score	Explanation
◉ 3	✔	1.00	
○ 4			
○ 2			

1		
Total	1.00 / 1.00	

value

1. The quality (positive or negative) that renders something desirable or valuable.
2. The degree of importance given to something.
3. That which is valued or highly esteemed, as one's morals, morality, or belief system.

MORE ON GRAMMARLY WORDS CLOSE

Question 6

A web site (www.medicine.ox.ac.
tests cites the following: “When th
tested their own samples, the ove
range 52% to 75%.” Assume the
positive test and that 30% of wor
number is closest to the probability of pregnancy given the positive test?

(Hints, watch Lecture 3 at around 7 minutes for a similar example. Also, there's a lot of Bayes' rule problems and descriptions out there, for example here's one for HIV testing. Note, discussions of Bayes' rule can get pretty heady. So if it's new to you, stick to basic treatments of the problem. Also see Homework 2 question on page 5/12.)

Your Answer		Score	Explanation
30%			
20%			
40%	✔	1.00	
10%			
Total		1.00 / 1.00	