edX

2. Multiple Choice
QQ-Plot

2/2 points (graded)

Consider an i.i.d. sample $X_1, X_2, \ldots, X_n \overset{iid}{\sim} P$ that has been reordered as $X_{(1)} \leq X_{(2)} \leq \ldots \leq X_{(n)}$. In the image below, we compare the empirical quantiles (from the data) to the standard Gaussian quantiles using a QQ-plot.

Normal Q-Q Plot
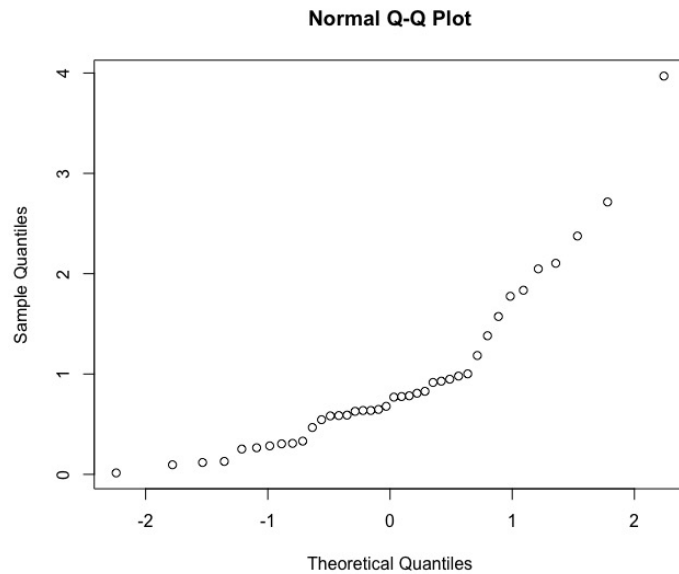
Does the distribution underlying the data have a heavier or lighter **right** tail than a Gaussian distribution?

- ⦿ heavier

- ◯ lighter

✔

Which of the following best represents the support of the distribution underlying the data?

- ◯ $(0, 1)$

- ◯ $(-2, 2)$

○ $(1,4)$

◉ $[0, \infty)$

○ $\mathbb{R}$

✔

Submit   You have used 1 of 3 attempts

ℹ Answers are displayed within the problem

Multivariate Gaussian

1/1 point (graded)

Let X and Y be two independent random variables with distribution $\mathcal{N}(0,1)$. Which of the following statements are correct? (Choose all that apply.)

☑ (X, Y) is a Gaussian vector, i.e. a multivariate Gaussian variable

☑ $(X + Y)$ and $(X - Y)$ are independent

☐ $\mathrm{Cov}(2X + Y, 3X) = 0$

☑ $(X, Y) \sim \mathcal{N}_2(0, I_2)$

✔

Note: Partial credit is given

You have used 1 of 3 attempts

Submit

Median

1/1 point (graded)

Let X be a random variable with pdf $f(x) = \frac{1}{2}e^{-|x|}$, $x \in \mathbb{R}$. The median of X minimizes which of the following functions?

(The notation $m \mapsto m^2$ denotes the function that takes input m and gives output m^2, and similarly for other output functions.)

- ○ $m \mapsto \mathbb{E}(X-m)^2$ ✔
- ◉ $m \mapsto \mathbb{E}|X-m|$
- ○ $m \mapsto m^4$ ✔
- ○ $m \mapsto \text{Var}(X-m)$ ✔

✔

Submit   You have used 1 of 3 attempts

Error and Bug Reports/Technical Issues

Topic: Midterm Exam 2:Midterm Exam 2 / 2. Multiple Choice

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💬 [Polling] What are your answers for this page?
Since, the staff is not releasing any green ticks at the moment, I would like to start a thread for answer sharing! My answers for this page is 1) Heavier, 2) [0, inf) (Exponential) ...
15

? Please, check the Deleted by MW-CTA question.
For me it should allow multiple choice. It does not.
5

💬 Grades
Hi, when will grades be posted?Thanks
2

☑ Problems show "Verified Track Access" and I cannot do the midterm
I opened the midterm this afternoon, but every problem says Verified Track Access Graded assessments are available to Verified Track learners. when I advance to the next pr...
4

💬 No timer!
I came here and found no timer, but having seen the questions, thought I ought to start. My start time was November 17, 17:52 GMT.
8

? [Staff] No time et no submit button
Hello, I started the exam, but I have no time and no "Submit" button. I know when I stares, so it is not a big deal not to see the timer... but what about the submission?
5

? [STAFF]Please check if the statement or answer selections of the problem Deleted by MW-CTA are correct.
Deleted by MW-CTA
3

? [STUFF]: No "Start my exam" button, the exam starts automatically!
I did not plan to start the exam before the weekend, just was browsing to see the introductory info to plan my time on the weekend accordingly. Please reply if it is possible to...
5

? [STAFF] Notation clarification for the Deleted by MW-CTA?
Deleted by MW-CTA
2