

AI1103 Assignment-7

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Download all python codes from

<https://github.com/CS20BTECH11062/AI1103/tree/main/Assignment-8/codes>

and latex-tikz codes from

<https://github.com/CS20BTECH11062/AI1103/tree/main/Assignment-8/Assignment-8.tex>

QUESTION

(UGC MATH (MATHA) JUNE 2017 Q.52)

X and Y are independent random variables each having the density

$$f(t) = \frac{1}{\pi} \frac{1}{1+t^2} \quad -\infty < t < +\infty \quad (0.0.1)$$

Then the density function of $\frac{X+Y}{3}$ for $-\infty < t < +\infty$ is

1) $\frac{6}{\pi} \frac{1}{4+9t^2}$

2) $\frac{6}{\pi} \frac{1}{9+4t^2}$

3) $\frac{3}{\pi} \frac{1}{1+9t^2}$

4) $\frac{3}{\pi} \frac{1}{9+t^2}$

SOLUTION