

**ANL 252**

**Python for Data Analytics**

**Tutor-Marked Assignment**

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#question a import math package

import math

#question d

#Construct a user-defined function using the formula of the probability density function

#given above to compute the corresponding probability density fX(x) based on the user inputs in (b) and (c)

def function (variance, X, mean):

return (1/(math.sqrt(2 \* math.pi \* variance\*\*2))\*(math.exp((-((X - mean)\*\*2))/(2\*variance\*\*2))))

# question b Employ a Python program to ask the user to enter the mean and variance of the

#distribution

mean=int(input("Enter mean (any value between minus infinity and plus infinity:"))

if mean == "":

print("0")

while True:

variance = input("Enter variance: ") or "1"

try:

v = int(variance)

if v >= 0:

print(f"the variance is {v}")

break

else:

print("variance is must be more than 0")

except ValueError:

print("variance must be a number, try again")

#question c Design an input screen for the user to enter the value of X

while True:

try:

X = int(input("Enter value of X(any value between minus infinity and plus infinity): "))

break

except ValueError:

print("\nThis is not a number. Try again...")

print()

print(function(v,X, mean))

#question e Use formatted printing to display the result of (d) to the user

print("The outcome of fx(x) is {}".format(function(v,X, mean)))