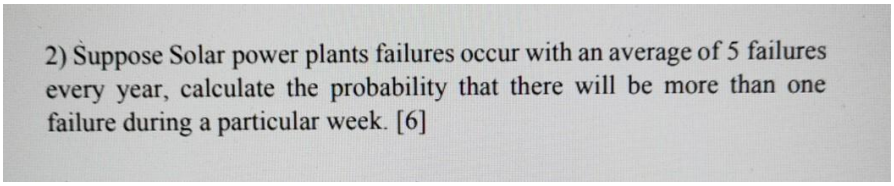
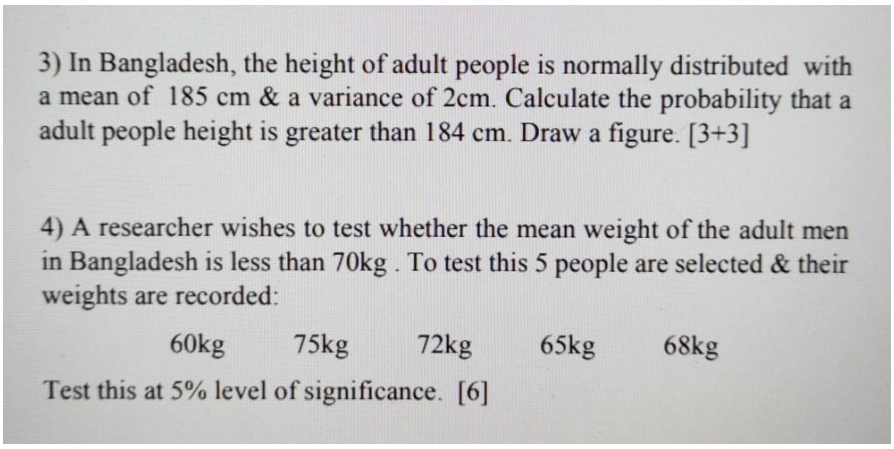
Question: 2) Suppose Solar power plants failures occur with an average ...





Please Solve these (2, 3 & 4 no. Questions) With necessary details. Thank you .

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Expert Answer

Anonymous answered this
1,035 answers

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Q2)

POISSON

Using the Excel formula for poisson distribution which is abbreviated as =poisson(x,mean,cumulative)

if cumulative =true then it gives us the probability of x being less than or equal to the number entered (that is in this case x will be 1, so it will give us the probability of x=0 and 1)

mean = 5 failures per year

hence mean failures per day = 5/365

hence, mean failures per week = (5/365)*(7)= 5/52 = 0.0962

so mean= 0.0962 FAILURES PER WEEK

(a) P(X >1)= 1- P(X <=1)=1-((poisson(1,0.0962,true)=1-0.9957=0.0043

reason : p(x>1) means we have to subtract the probability of x being 0 and 1 from the overall probability (which is 1 obviously)

Q3)

Given for normal distribution

mean(say u) = 185cm ,

variance = 2cm^2

Standardising the equation by substitution z = (x-u)/s we get

z=(184-185)/1.414

=p(z >(x-u)/s)

=p(z>(184-185)/1.414)

=p(z>-0.707)

=1-normsdist(-0.707)

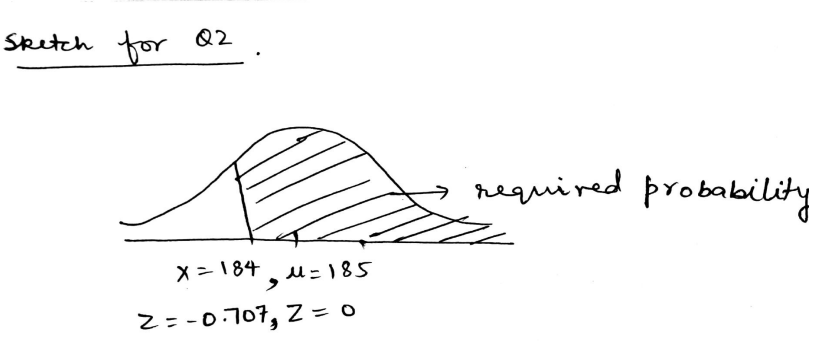
=1-0.2398

=0.7602

NOTE : the normsdit(z) is the excel function of normal distribution which gives the probability of z from negative infinity to that value of z specified in the function.

we need p(z> -0.707) so we will subtract the p(z< -0.707) from 1 to get the answer

i am attaching the image for the sketch



Q3)

Ho : u=70

Ha : u <70

DATA SET : 60,75,72,65,68

sample mean(x) = sum of observations / no of observations =(60+75+72+65+68)= 340/5=68

n= 5

sample standard deviation =s= sqrt[(sum of (Xi-mean)^2)/(n-1)] =

=sqrt[(60-68)^2+(75-68)^2+(72-68)^2+(65-68)^2+(68-68)^2)/(5-1)]= sqrt(138/4)= sqrt(34.5)= 5.874

degrees of freedom = 5-1=4

t-critical at 0.05 level of significance and degrees of freedom = 4 is -2.132 (leftt tailed)

test statistic = (x-u)/s/sqrt(n) = (68-70)/5.874/sqrt(5)= -0.76

since test statistic > t-critical we fail to reject Ho and conclude that the mean weight of adult men in bangladesh is 70kg

Hope you find my answers satisfactory.Please do leave a like :) Thanks !

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