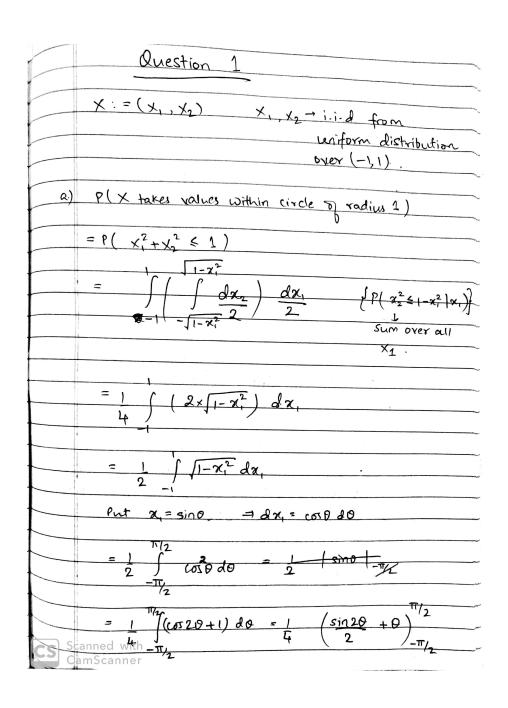
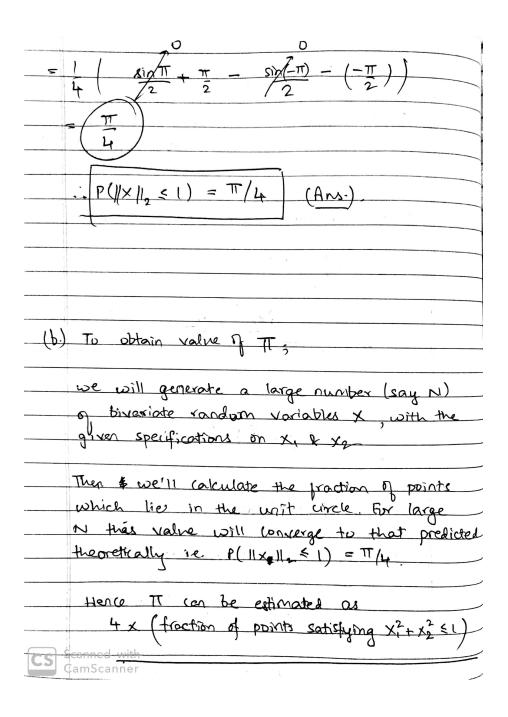
CS 215 ASSIGNMENT

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A justification can simply be the Weak Law
of Large Numbers.
- X 1, X 2
we can define a random variable y
as 1 when x is inside unit circle
as 0 when x is outside unit circle.
So y is a Bernaulli randona variable with
parameter = TT/2.
Now after generating N values of X,
we have Y, Y2, Y3, , YN. as iid
$E(Y) = TT/L \rightarrow finite$.
SN= Y+ Y2+ -+ YN
Ν.
SN = E[Y] as N - a from Weak
I Law of Large
Numbers.
CS) Scanned wife action of points lying inside unit circle.
Camsganner

Estimate:	7	with	
	. D		
N = 10	کت	2.00000	
N = 102	is	3.24000	
N=103	ìs	3-24400	
N = 104	is	3-12280	
N=105	is	3.13972	
N=106	is	3-14213	
N = 107	ĨS	3.14178	
N=108	ÎS	3.14165	

with the normal code,
for to values of N as large as 10,
the problem that arises to is a lot of
memory is taken by the array; "exceeding
"array size limit", in generating 10 numbers
To avoid this, we can run the code of
10 to loo times, an at each time out of
the 100, we'll just requite arrays of
size 10 which is within the array size
limit. So we can compute the over fraction at
eachedstelp out of the 100 to get final value.
Gamscannatas and you are using a Navarate about the product.

	The normal code doesnot handle this case
	when N=103, but runing 10 a 100 times
	does work
	At each step we are effectively creating a destroying arrays of length 10, never exceeding it & using
	the value of that the fraction to compute overall
	faction. y
(d.)	For this, we will use central Limit Theorem,
	Again we define a random variable y which
	6 1 when x 6 inside unit circle
	D when x is outside unit circle.
	Y is a Bernoulli fandown variable with
	parameter p. (p= T/4).
	Varience of Y is p(1-p)
	SN = ZYi for large values of N.
	N Swill belong to a
	Causian
	SN ~ N (E(Y), Var(Y))
CS 3	carthe N M
	amscanner N

