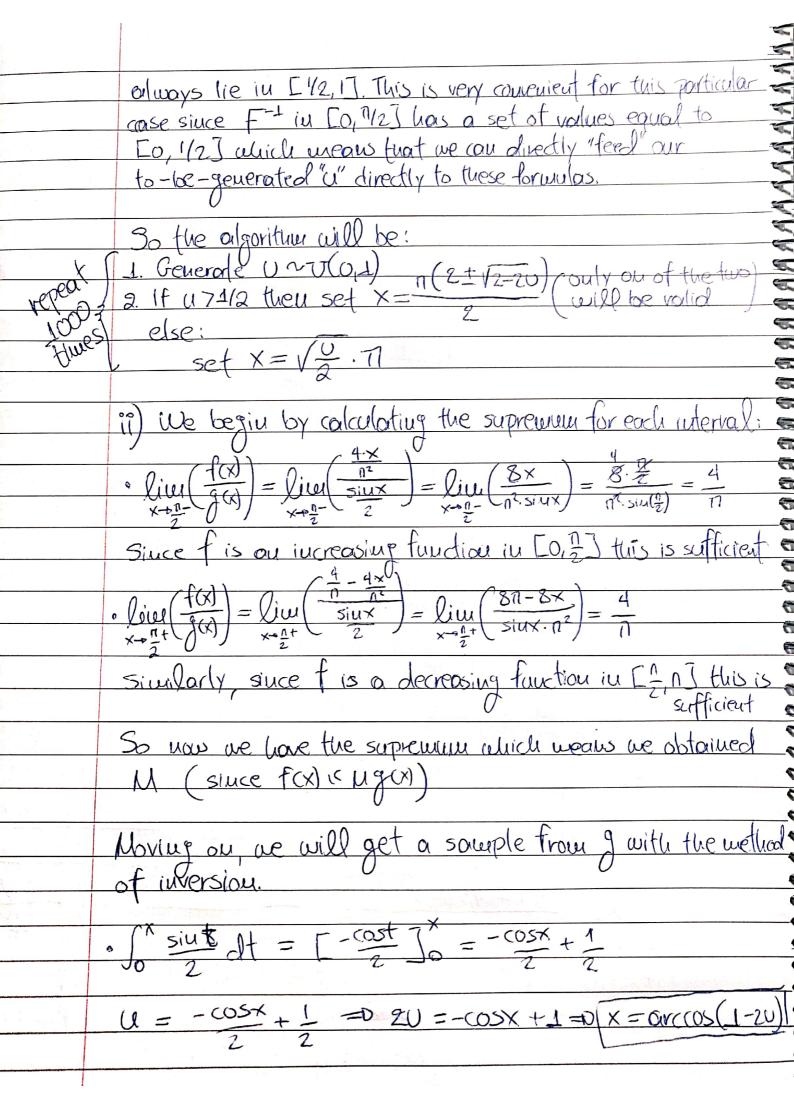
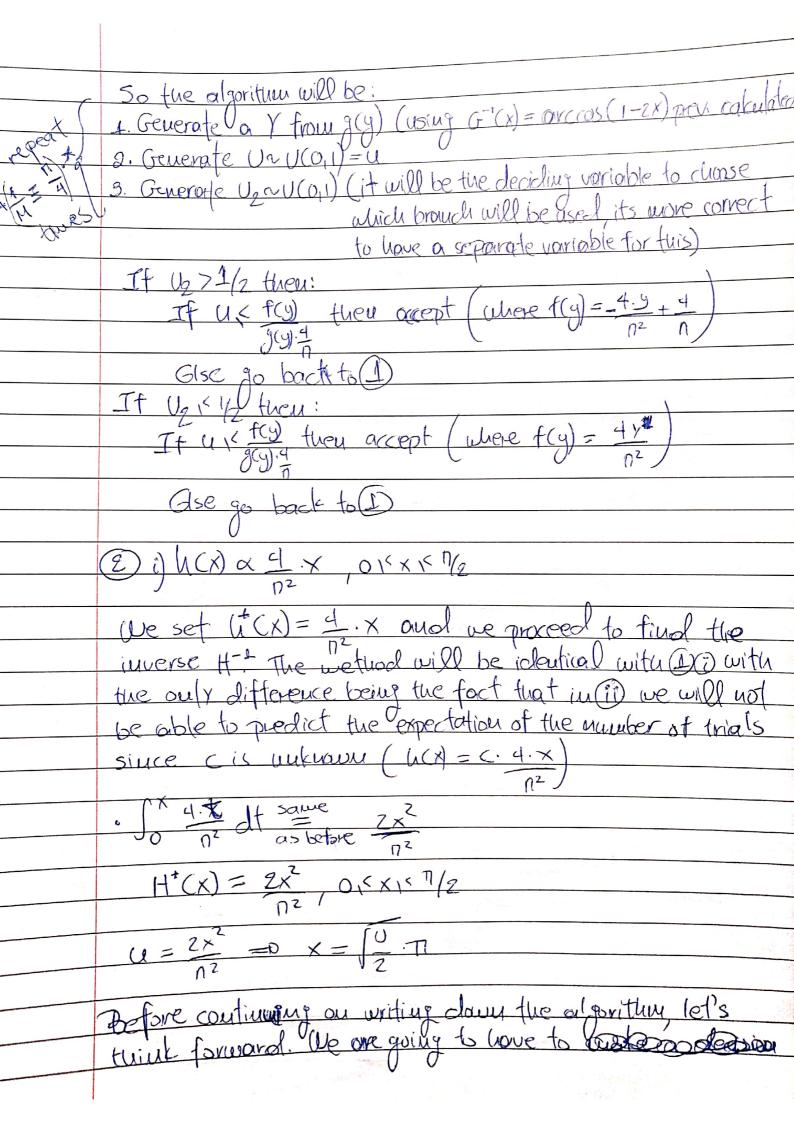
Simulation Assignment I $\frac{4}{n^2} \times \frac{4}{n^2} \times \frac{n/2}{n/2}$ $\frac{4}{n} - \frac{4}{n^2} \times \frac{n/2}{n/2} \times \frac{n/2}{n/2}$ 21.00 We proceed to calculate the CDF: $\int_0^x \frac{4}{n^2} \cdot t dt = \left[\frac{2t^2}{n^2} \right]_0^x = \frac{2x^2}{n^2}$ · So 112 dt + Sale 1 - 12 to t = [2+2] 10+ [4t - 2+] 1/2 = $= 4x - 2x^2 - 1$ 50, $T(x) = \frac{2x^2}{n^2}$, 0 < x < 1/2 $\frac{4x}{2^2} - \frac{2x^2}{1/2} < x < T$ Moving on we will calculate the inverse: • $0 = \frac{2x^2}{2} \Rightarrow x = \sqrt{\frac{0}{2}} \cdot T$ • $U = \frac{4x}{1} - \frac{2x^2}{1} - \frac{1}{1} = P \quad \Pi^2 \cdot U = 4x \cdot \Pi - 2x^2 - \Pi^2 = D \left[2x^2 - 4\Pi x + \Pi^2 \left(U + 1 \right) \right] = C$ $\times 12 = \frac{40 \pm \sqrt{160^2 - 800^2 - 80^2}}{4} = \frac{40 \pm \sqrt{80^2 - 800^2}}{4} = \pi \left(\frac{2 \pm \sqrt{2 - 20^2}}{2}\right)$ Deep in mind that since F1 is "1-1" in [7,1] we must accept exactly one X. Also, the set of values for F(x) is [1/2, 1] which wears that u will have values that will





an contratage get a somple from f but we have only
the port that lies in [a, 7/2] (since hi(x) = f(x), where it [a]) So we will take advantage of the fact that f is symmetrical, and set (1-u) when we are in the case u > 1/2. Also we are going to subtract the result from To since have to the process exactly on the interval that we want them all the values exactly on the interval that we want them So finally: 1. Generate u ~ V(0,1) rea 1. Generate u ~ V(0,1) rea 2. If u f 1/2 then set x = V2. To else: Set x = TI - V(1-u). To ii) Like before we will begin by computing the sepremum but first we will have to after the enclope function. Firstly we fix accordingly the interval of x. So now g(x) = sixx takes values from xf [0, 2]. But, an emelope thackion must also have area = 1 so we will remove 1 from sinx.
So we will take advantage of the fact that f is
symmetrical, and set (1-4) when we are in the case
47 1/2. Also we ove going to subtract the result from
n since to the the secretaries exacted
H-CX)=VU. TI court overcome I and will throw
all the values exactly on the interval that we want them I
So finally:
nea 1. Generate (1~V(O1))
relo) 2. If U < 1/2 they set X = VU. T
report 1. Gruerate $U \sim V(o_{11})$ report 2. If $U \in L$ then set $X = VU = T$ else: Set $X = TI - \sqrt{CI-U} = TI$
Set $X = \pi - \sqrt{c_{1}-v}$. π
2
ii) Like before we will begu by councitive the sometime
but first we will have to alter the envelope function Firstly
we fix accordingly the internal of x So was acres sinx
takes values form XF[0,0] But an englose of
also have one = I so us will some in from the
on (so have onea = I so we will remove I from sinx. The final p(x) is:
The political of the po
$f(x) = \sin x, x \in [0, \frac{0}{2}]$
$\left(\frac{f(x)}{f(x)}\right) = \left(\frac{f(x)}{f(x)}\right) = \left($
$\lim_{x \to \frac{\Lambda}{2}} \left(\frac{f(x)}{g(x)} \right) = \lim_{x \to \frac{\Lambda}{2}} \left(\frac{4x}{g(x)} \right) = \frac{2}{11}$
Now we will get the sample from f:
$\int_0^x \sin t dt = \left[-\cos t \right]_0^x = -\cos x + 1$
$-u = -\cos x + 1 = 0 x = \operatorname{Drccos}(1-u)$
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