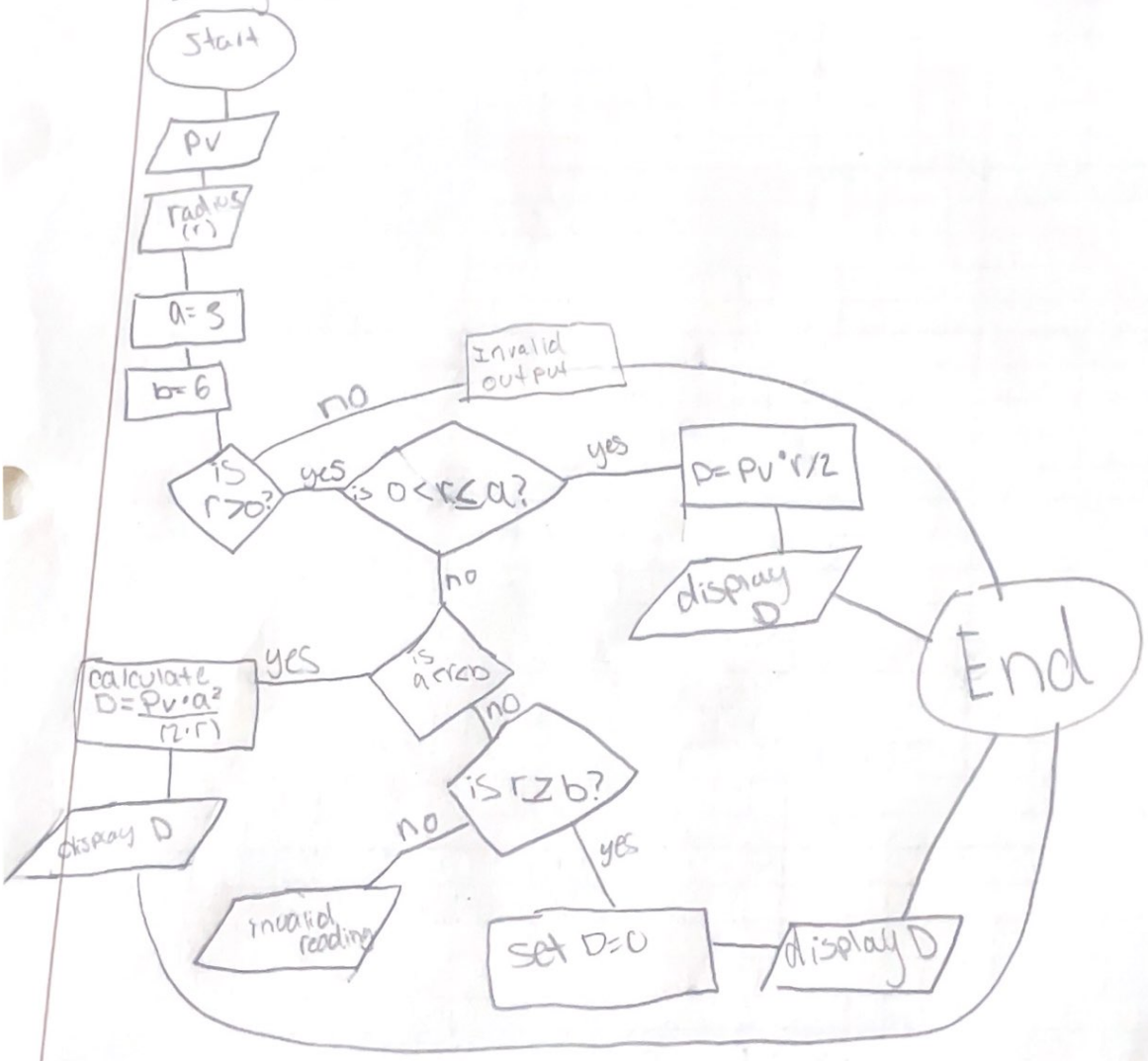
Ened 1160 9/26/2023	Sec 13 group 204	Meredith Bartel Meredith Bartel

Problem statement:

Use labview to calculate the electric flux density (D) in coaxial cable based on the charge density (pv) and radial distance. You will be able to calculate them by using the inputs we put in.

Diagrams:



Theory:

For $0 < r \leq a$: $D = pv \cdot r/2$

For $a < r < b$: $D = pv \cdot a^2 / (2 \cdot r)$

For $r \geq b$: $D = 0$

Assumptions:

- the user of labview will put in the right values
- the model of the coaxible cable will be built correctly
- the labview configurations for all of the formulas are right

Solutions:

my solutions will be held in my submission of , HW4BartelMs.Vi

Verification

r	ρ_v	B	a	D
0	0	6	3	invalid
1	1	6	3	2
2	2	6	3	9
6	3	6	3	4 20
4	4	6	3	
8	5	6	3	6
2	6	6	3	6
6	7	6	3	3
7	9	6	3	31.5
-2	8	6	3	-18

Conclusion:

In this program the lab veiw was able to determine the electric flux density (D) in a coaxable cable based on the given conditions.