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CPE 2600- Systems Programming



Dr. Turney

PA 3

Pseudocode

CPE 2600
PA3 Pseudo Code

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- Add : $c1 + c2$
- Subtract : $c1 - c2$
- Magnitude : $\sqrt{a^2 + b^2} \Rightarrow \text{cabs}()$
- Phase : $\arctan(\frac{b}{a}) \Rightarrow \text{carg}()$
- Rectangular form : $\text{mag} \cdot (\cos(\text{phase}) + \sin(\text{phase})i)$
- Multiply : $c1 \cdot c2$
- Divide : $c1 / c2$
- Parallel Impedance : $Z_{eq} = Z1 \cdot Z2 / (Z1 + Z2) \Rightarrow (c1 \cdot c2) / (c1 + c2)$

Show Program working

```
goetschm@AAD-PF50KM51:~/cpe2600/pa3$ ./complex
x = 3.00 + 4.00i
y = 1.00 + 2.00i
Addition:
x + y = 4.00 + 6.00i
Subtraction:
x - y = 2.00 + 2.00i
Magnitude of x:
|sqrt(real^2 + imag^2)| = 5.00
Phase of x (radians):
atan2(imag, real) = 0.93
Rectangular form from polar:
magnitude * (cos(phase) + sin(phase)i) = 3.00 + 4.00i
Multiplication:
x * y = -5.00 + 10.00i
Division:
x / y = 2.20 + -0.40i
Parallel Impedance: 0.77 + 1.35i
goetschm@AAD-PF50KM51:~/cpe2600/pa3$
```