Assignment 4
ME 781
(Set operations)

Perform the operations given below based on the following sets. Depict your answer both in the form of sets and pictorially. Assume $\boldsymbol{R^n}$ (with *n* being as per the dimensionality of the set under consideration) as the universal set unless explicitly stated.

A=[-1,1]

B=(0.5,2]

C={2,3, 7}

D={(x,y):$x^2+y^2 \leq 1$}

E={(x,y):$x^2+y^2 < 1$}

F={(x,y):$x^2+y^2 \leq 0.25$}

G={1,4}

Operations:

1. $(A \cup B)$
2. $(C \setminus B)$
3. $(A \Delta B)$
4. $(A \times \partial A) \cup (\partial A \times A)$
5. A^{int}
6. B^{cl}
7. C^{int}
8. $C \oplus A$
9. $(\partial B \times \partial B) \oplus D$
10. $(E \oplus F) \ominus F$
11. $((C \times G) \oplus F) \ominus (F^{int})$