Tutorial 9

Construct PDA's that accepts the languages given bellow:

1. **$L = \{a^n b^n c^m \mid n\ m \geq 1\}$ over $\sum = \{a, b, c\}$**
2. **$L = \{a^n b^m c^{n+m} \mid n\ m \geq 1\}$ over $\sum = \{a, b, c\}$**
3. **$L = \{a^n b^{2n} \mid n \geq 1\}$ over $\sum = \{a, b\}$**
4. **$L = \{a^n b^{2n+1} \mid n \geq 1\}$ over $\sum = \{a, b\}$**
5. **$L = \{wcw^R \mid w \in (a+b)^+\}$ over $\sum = \{a, b\}$**
6. **$L = \{w \mid w = ((()))\}$ over $\sum = \{(,)\}$**
7. **$L = \{a^m b^n \mid m = n \text{ or } 2m = n, n\ m \geq 1\}$ over $\sum = \{a, b\}$**
8. **$L = \{ww^R \mid w \in (a+b)^+\}$ over $\sum = \{a, b\}$**
9. **$L = \{w \mid n_a(w) = n_b(w), n \geq 1\}$ over $\sum = \{a, b\}$**
10. **$L = \{a^m b^n \mid m < n, n\ m \geq 1\}$ over $\sum = \{a, b, c\}$**