Design PDA for the given Languages.

1. $L = \{0^i 1^j \,;\, i \leq j\}$
2. $L = \{0^i 1^j \,;\, i \geq j\}$
3. $L = \{0^i 1^j \,;\, i \leq j \leq 2i\}$
4. $L = \{0^i 1^j \,;\, 2i \leq j \leq 3i\}$
5. $L = \{0^i 1^j 2^k 3^l \,;\, i + j = k + l\}$
6. $L = \{0^i 1^j 2^k 3^l \,;\, i + l = j + k\}$
7. $L = \{0^i 1^j 2^k \,;\, i, j, k \geq 0; i == j \; or \; j == k\}$
8. $L = \{0^i 1^j 2^i \,;\, i \geq 0,\; j > 2\}$
9. $L = \{0^i 1^j 2^k \,;\, i, j, k \geq 0;\; k = i + j\}$
10. $L = \{0^i 1^j 2^k \,;\, i, j, k \geq 0; j = i + k\}$
11. $L = \{w \mid w \; has \; twice \; a's \; \; than \; b's\}$
12. $L = \{w \mid w \; has \; three \; more \; a's \; \; than \; b's\}$
13. $L = \{w \mid w \; over \; \{a, b\} \; \& \; w \; is \; not \; a \; palindrom\}$
14. $L = \{w \mid w \; over \; \{a, b\} \; \& \; w \; is \; a \; even \; palindrom\}$
15. $L = \{0^i 1^j \,;\, i = 3j + 2\}$
16. $L = \{(ab)^m \; z^{3r} \; c^n d^n e^m; m, n, r \geq 0\}$
17. $L = \left\{\left(a^i b^j\right)^n (c^k d^l)^m; n > m; i > j; k > l; m, j, l \geq 0\right\}$
18. $L = \{\left(a^i b^j\right)^n (c^k d^l)^m; n < m; i < j; k < l; n, i, k \geq 0\}$