

## Identities of Regular Expression (RE)

1.  $R + \emptyset = \emptyset + R = R$
2.  $\emptyset R = R \emptyset = \emptyset$
3.  $\emptyset^* = \epsilon$
4.  $\epsilon R = R \epsilon = R$
5.  $\epsilon^* = \epsilon$
6.  $R + R = R$
7.  $R^* R^* = R^*$
8.  $R R^* = R^* R$
9.  $(R^*)^* = R^*$
10.  $\epsilon + R R^* = \epsilon + R^* R = R^*$
11.  $(PQ)^* P = P(QP)^*$
12.  $(P + Q)^* = (P^* Q^*)^* = (P^* + Q^*)^*$
13.  $(P + Q)R = PR + QR$
14.  $R(P + Q) = RP + RQ$
15.  $(\epsilon + R)^* = R^*$
16.  $(\epsilon + R) R^* = R^* (\epsilon + R) = R^*$
17.  $P + R^* P = R^* P$
18.  $P + P R^* = P R^*$