1. Answers:
2. (λ+a+b)(λ+a+b)
3. ((a+b)(a+b))\*
4. a(a+b)\*b++(a+b)\*a
5. a(a+b)\*b++(a+b)\*b
6. A regular expression is a sequence of characters that define a search pattern. Usually such patterns are used by string searching algorithms for "find" or "find and replace" operations on strings, or for input validation.

Identities of regular expression:

1. λ + R = R
2. λR + Rλ = λ
3. R + R = R
4. R\*R\* = R\*
5. RR\* = R\*R
6. (R\*)\* = R\*
7. (PQ)\*P = P(QP)\*
8. (P+Q)\* = (P\*Q\*)\*=(P\*+Q\*)\*
9. (P+Q)R=PR+QR
10. εR = Rε = R
11. ε\* = ε and Q\* = ε
12. ε + RR\* = εR\*R = R\*
13. Any **set** that represents the value of the **Regular** Expression is called a **Regular Set.**

