

1. a.  ~~$011$~~   $01(11)^*0$   
 b.  ~~$(0^*11)^*$~~   $0^*10^*$   
 c.  $1^*$

2. a.  $(1^*)^*$   
 b.  $(1^*(1^*)^*1^*)^*$   
 c.  $(1^*(1^*(1^*(1^*)^*1^*)^*1^*)^*1^*)^*$

3. a.  $0^*10^*(10^*1)^*0^*$   
 b.  $1^*(01^*0)^*1^*$   
 c.  ~~$(00^*)^*1(00^*)^*(100^*)^*1(00^*)^*$~~   
 d.  $(0^*10^*(10^*1)^*0^*) \cup (1^*(01^*0)^*1^*)$   
 e.  $(00)^*1(00)^*(1(00)^*1)^*(00)^*$