CpSc 3500 — Goddard

In-class Practice 3: Regular Expressions

For the alphabet $\{0, 1\}$, give REs for each language:

1. All strings containing exactly two 0s

   $1^*01^*01^*$

2. All strings containing as least two 0s

   $(0+1)^*0(0+1)^*0(0+1)^*$

3. All strings containing 00 as substring

   $(0+1)^*00(0+1)^*$

4. All strings NOT containing 00 as substring

   Can break such a string before each instance of 1;
   each resultant piece is either 1 or 10, apart from the first piece which might be 0. So answer is: $(0+\varepsilon)(1+10)^*$