Give regular expressions for each of the following languages over the alphabet {0, 1}.

1. All strings containing the substring 000.

2. All strings *not* containing the substring 000.

3. All strings in which every run of 0s has length at least 3.

4. All strings in which 1 does not appear after a substring 000.

5. All strings containing at least three 0s.

6. Every string except 000. *[Hint: Don't try to be clever.]*

7. All strings w such that *in every prefix of w*, the number of **0**s and **1**s differ by at most 1.

*8. All strings containing at least two **0**s and at least one **1**.

*9. All strings w such that *in every prefix of w*, the number of **0**s and **1**s differ by at most 2.

★10. All strings in which the substring `000` appears an even number of times.
  (For example, `0001000` and `0000` are in this language, but `00000` is not.)