

CSE625 Homework 2
Due Wednesday, January 21

Give a regular expression for each of the following languages:

1. $\{ s \in \{a, b\}^* : |s| \text{ is not divisible by } 2. \}$
2. $\{ s \in \{a, b\}^* : s \text{ does not contain } abb \text{ as a substring. } \}$
3. $\{ s \in \{a, b\}^* : s \text{ contains at least one } a \text{ and two } b\text{'s.} \}$
4. $\{ a^i b^j : i + j \geq 3 \text{ and } i, j \geq 0. \}$
5. $\{ a^i b a^j : i + j \text{ is odd and } i, j \geq 0. \}$
(Hint: One of i and j is odd.)

(The grader will only grade a subset of these problems. For more practice, try problems 3.3, 3.7, 3.8, 3.9 and 3.11 in Martin.)