CSE 105 Review Quiz 9

This is an *individual* review quiz. You should not discuss questions or share answers with other students in the class. If you are unsure about the correct solution for a question, review the book and the lecture. If you are still unsure, make an educated guess.

Scores translate to participation points as follows:
4 or 5 points = 2 participation points
2 or 3 points = 1 participation points
0 or 1 points = 0 participation points

The deadline is Sunday 12/01 at midnight.

* Required

1. **Email address** *

2. **First name** *

3. **Last name** *

4. **UCSD PID** *

5. **Q1: Which of the following is True? (select all that apply)** *
   
   * Check all that apply.
   
   □ Any subset of a decidable language is decidable.
   □ Any subset of a recognizable language is recognizable.
   □ There exists a decidable language which is not recognizable.
   □ There exists a recognizable language which is not decidable.

6. **Q2: Which of the following is True? (select all that apply)** *
   
   * Check all that apply.
   
   □ Recognizable languages are closed under complement.
   □ Decidable languages are closed under complement.
   □ Recognizable languages are closed under intersection.
   □ Decidable languages are closed under intersection.
7. **Q3: Which of the following languages are recognizable? (Select all that apply)** *

Check all that apply.

- L = {<M>: M is a Turing machine and L(M) is finite}
- L = {<M1, M2, w>: M1, M2 are Turing machines, M1 accepts w and M2 rejects w}
- L = {<D, M, w>: D is a DFA, M is a Turing machine, and D rejects w or M accepts w}
- L = {<D, M>: D is a DFA, M is a Turing machine, and either D or M rejects the empty string}
- None of the above

8. **Q4: Which of the following languages are decidable? (select all that apply)**

Check all that apply.

- L = {<D, w> : D is a DFA and w \( \notin \) L(D)}
- L = {<N, w> : N is a NFA and w \( \in \) L(N)}
- L = {<P, w> : P is a PDA and w \( \in \) L(P)}
- L = {<M, w> : M is a TM and w \( \in \) L(M)}

9. **Q5: Select all the true statements below.** *

Check all that apply.

- The complement of A_TM reduces to A_TM
- For any undecidable language L, A_TM reduces to L
- For any undecidable language L, it reduces to A_TM
- For any decidable language L, it reduces to A_TM

☐ Send me a copy of my responses.