1. (1 pt.)
   - This *quick check* is **closed book, notes, etc.**
   - You may use a 3 in. × 5 in. **reference card**, *hand-written by you.*
   - Use the **classroom and textbook conventions** and terminology.

   Read the above carefully; then write your name below:

2. (3 pts.) Provide the textbook's definition of a *system of difference constraints.*

3. (3 pts.) Complete the following statement of Lemma 24.8 from the textbook, about solutions to systems of difference constraints:

   Let $x = (x_1, x_2, \ldots, x_n)$ be a solution to a system $Ax \leq b$ of difference constraints, and let $d$ be any constant. Then ...

4. (3 pts.) State the theorem relating systems of difference constraints to a shortest-paths problem.