Name: ________________________________

1. (1 pt.)
   - **Read all material carefully.** Ask for clarifications if needed.
   - You may refer to your books, papers, and notes during this test.
   - No computer or network access of any kind is allowed (or needed).
   - Write, and draw, carefully. Ambiguous or cryptic answers receive zero credit.
   - Use the conventions used in class and the textbook for all material.
   - COS 480 students should answer non-⋆ questions; ⋆ questions are for extra credit.
   - COS 580 students should answer all questions, including ⋆ questions.

Write your name in the space provided above.

2. (14 pts.) Write XPath queries for
   
   (a) all common names in the English (en) language.
   
   (b) the common names of all ferns that have a fruit-date in June.

Briefly explain why your queries yield the desired results.
3. (20 pts.) Write XQuery queries for
   
   (a) a sorted list of all dates in the ISO format.
   
   (b) descriptions of habitats in which a fern of genus Matteuccia is found.

Briefly explain why your queries yield the desired results.
[additional space for answering the earlier question]
4. (10 pts.) Write a SQL trigger that inserts a tuple $(a, b)$ into a table $S$ whenever a tuple $(a, b, c, d)$ is deleted from a table $R$ with $c < d$. 
5. ★ (15 pts.)

(a) Write an XPath query for the dates of observations that have two or more locations.

(b) Write an XQuery query for the binomial names of all ferns that have never been observed in March.

Briefly explain why your queries yield the desired results.
[additional space for answering the earlier question]