

**Mathematical Practitioners Exercise**

**Goal** Through this exercise you get some hands-on experience with certain practical aspects of “mathematical fieldwork”. Part of this exercise is to do the actual work and report about it. Another part is to contemplate what you learn from this experience about history, math, and teaching. This exercise should be done in groups of 2-3 students.

**To do**

1. Build a cross-staff. It need not be a very advanced specimen, just keep it basic. Better still, every group member can make his/her own cross-staff so that you have several (possibly different) instruments to experiment with.
2. Use your cross-staff to determine the height of the Dom Tower in the centre of Utrecht.
3. (a) Consider (technical, mathematical, or other) difficulties that you encountered and their impact on your end result.  
(b) Make an estimate of the accuracy of your result, based only on your own experiences (i.e., without reference to an “authoritative” source such as Wikipedia or the VVV).  
(c) Is there anything that you would do differently if you were to repeat this exercise?
4. Write a report. The report should contain your measured height of the Dom Tower and how you obtained it as well as your results of 3a–3b–3c above. Conclude your report with a “lessons learned” section where you discuss if and how your understanding of (history of) mathematics (teaching) has changed.
5. Size: approx. 1500 words (soft limit). Hand in: May 2, 2014.

**Evaluation** Factors taken into account for grading include: clear and concise exposition, relation to math history and teaching, inquisitive attitude, self-relection, discussion of accuracy.