Shlomo Libeskind\* (shlomo@uoregon.edu), Mathematics department, University of Oregon, Eugene, OR 97403. Improving high school geometry by carefully selecting what and how we teach prospective high school teachers.

We will argue that a course emphasizing Euclidean and transformational geometry, with an ample number of challenging problems, is what is needed for geometry courses for prospective teachers. Such a course needs to emphasize the following pedagogy: 1. how does one know where to begin a proof, a construction or a solution, and how to proceed? 2. which approach is more promising, and why? 3. are different solutions possible, and how do they compare? Engaging problems emphasizing the above points will be presented. One such problem is the Treasure Island Problem (see below), which can be solved in different ways, but we will argue that a transformational approach is "best." "Pirates buried a treasure on a deserted island where one would find a gallows, an oak tree, and a pine tree. To locate the treasure begin at the gallows, walk to the pine tree, turn right 90 degrees and walk straight the same number of steps. Drive a spike at that point. Then return to the gallows, walk to the oak tree and turn left 90 degrees and walk the same number of steps. Drive a second spike in the ground. At the midpoint between the spikes is the treasure. An expedition reached the island, found the oak tree and the pine tree, but no gallows—it had rotted. Show how the treasure can (Received September 20, 2007)