16.21 - Techniques of structural analysis and design
## Homework assignment # 8
Handed out: 4/20/05
Due: 4/27/05

April 19, 2005

1. Exercise 7.43 from textbook.

2. Exercise 7.42 from textbook.

3. Exercise 7.38 from textbook.

4. Some of you may have to face some version of the following problem in the future when designing the first generation of **space elevators** (To learn about space elevators visit http://science.nasa.gov/headlines/y2000/ast07sep1.htm). Compute with an accuracy of 99% the maximum length the following columns can have before they buckle under their own weight. Assume uniform cross section with area A and moment of inertia I. The material's density is ρ and it's Young's Modulus E. The acceleration of gravity is g. Use Ritz Method.
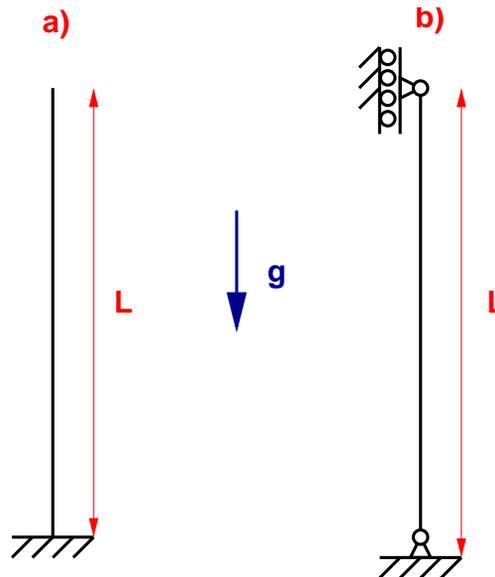
5. Exercise 7.45 from textbook.

6. Exercise 7.47 from textbook.