

EAS 361

Quiz 1

12 October 2006

Your Name: _____

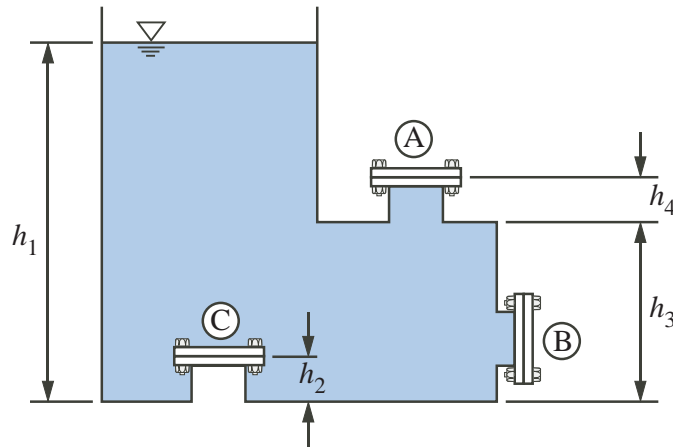
This exam booklet contains

1. This cover sheet.
2. A single sheet of paper with a quiz question

Do not open the exam booklet until you are instructed to do so.

You have 15 minutes to complete the quiz.

A tank of water is open to the atmosphere at the top. At locations A, B, and C, circular hatches are held in place with bolts attached to flanges.



Each of the following questions asks you to predict how changing a dimension of the tank will affect the design requirement for the strength of the bolts. Your answer should be either **Stronger**, **Weaker**, or **No Change**, where these terms mean

- Stronger:** The change of dimension requires the bolts to be stronger.
Weaker: The change of dimension allows the bolts to be weaker.
No Change: The change of dimension does not change the strength requirement for the bolts.

You must also provide a reason to support your answer. The reason should include *only relevant* engineering formulas and a verbal explanation written in complete sentences. For each question, the short answer is worth 5 points and the reason is worth 15 points.

1. With h_2 , h_3 , and h_4 fixed, how does the design requirement for bolts on flange A change when h_1 is increased?

Answer: _____

Reason:

2. With h_1 , h_2 , and h_4 fixed, how does the design requirement for bolts on flange B change when h_3 is increased?

Answer: _____

Reason: