

Abstract Submitted
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Stability of truncated cones with fill fraction: III. Laboratory experiments SAAMI SHAIBANI, Instruction Methods, Academics Advanced Scholarship (IMAAS) — Previous research[1,2] has established the properties of various liquid containers, and the results are highly non-trivial. This characteristic lends itself to the design of practical exercises for students to discover these properties, solely on an empirical basis in the absence of any knowledge of the theoretical formulae. The primarily numerical basis for the latter, in conjunction with calculus methods, has been extended here to a produce an exact derivation with an analytical approach that counterintuitively involves lower levels of mathematics. Such a successful combination of techniques is another example of the benefits of instruction with multiple pedagogical modalities that have been described in recent work[3,4]. The format of the laboratory experiments is improved by incorporating this diversity of subject matter and it makes the material more accessible to a broader range of students. [1] Announcer, 34 (2), 164, 2004; [2] Announcer, 34 (4), 79, 2005; [3] <http://meetings.aps.org/link/BAPS.2017.APR.H2.7>; [4] Bull Am Phys Soc, Vol 63 (in press)

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