

Preface

This collection of problems results from the demand of students for supplementary problems and support in the preparation for examinations. With the present collection “Engineering Mechanics 1 - Formulas and Problems, Statics” we provide more additional exercise material. The subject “Statics” is commonly taught in the basic course of Engineering Mechanics classes at universities.

The problems analyzed within these courses use equilibrium conditions and the principle of virtual work to analyze static problems and to compute reaction forces and stress resultants. These concepts are the basic of many structural analyses of components used in civil and mechanical engineering.

We would like to make the reader aware that pure reading and trying to comprehend the presented solutions will not provide a deeper understanding of mechanics. Neither does it improve the problem solving skills. Using this collection wisely, one has to try to solve the problems independently. The proposed solution should only be considered when experiencing major problems in solving an exercise.

Obviously this collection cannot substitute a full-scale textbook. If not familiar with the formulae, explanations, or technical terms the reader has to consider his or her course material or additional textbooks on mechanics of materials. An incomplete list is provided on page IX.

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Statics – Formulas and Problems

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