

CONTENTS

	<u>Page</u>
Foreword	3
<u>1. Extrema and stationarities of functions</u>	5
1. 1. Simple problems	5
1. 2. Linear Programming	15
1. 3. RAYLEIGH-quotient and eigenvalues of matrices	26
<u>2. Principles based on the virtual work theorem</u>	33
2. 1. The virtual work theorem itself	33
2. 2. Problems with holonomic constraints . .	36
2. 3. Problems with inholonomic constraints .	46
<u>3. Potentials</u>	51
<u>4. Describing quantities of continua</u>	54
4. 1. Tensor notation	54
4. 2. The COSSERAT-continuum	67
<u>5. Passive work</u>	81
5. 1. Dummy loads	81
5. 2. Dummy displacements	86
<u>6. Calculus of variations</u>	92
6. 1. A two-dimensional problem	92
6. 2. A three-dimensional problem	97

	<u>Page</u>
<u>7. LAGRANGE-equations of second kind</u>	100
<u>8. RAYLEIGH-RITZ-method applied to eigenfrequencies of one-dimensional continuous system</u>	106
<u>9. Harmonic balance</u>	120
<u>10. Elastic stability</u>	128
<u>11. Canonical equations</u>	145
<u>12. Elastomechanics</u>	148
12.1. Plate theory	148
12.2. Theorems of COTTERIL-CASTIGLIANO . .	162
12.3. Torsion of prismatic beams.	172
<u>13. Hydrodynamics</u>	190
<u>14. Plastomechanics</u>	201
14.1. Upper and lower bounds to problems of metal forming	201
14.2. Load carrying capacity.	221
Table of figures, problems and tables	229

