

exercise session 4

Rachel Leuthold and Moritz Diehl
Wind Energy Systems, Summer-Semester 2018

Albert-Ludwigs-University, Freiburg, Germany



June 26, 2018

1 concept questions

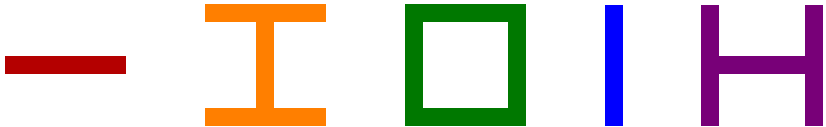
2 homework

let's play a game...



concept questions!

which beam cross-section has the largest I_x ?
(for \hat{x} horizontal and \hat{y} vertical)



red

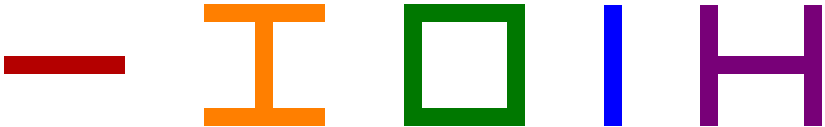
orange

green

blue

purple

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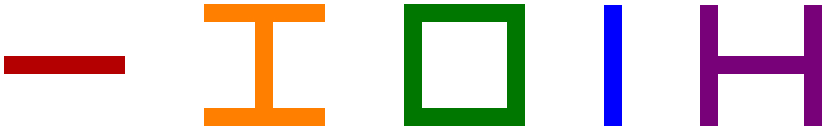
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given the same bending moment (vertical),
which beam feels the most bending stress?



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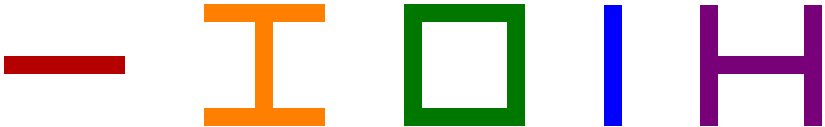
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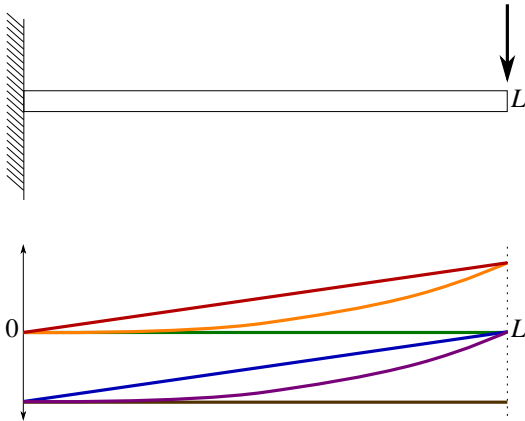
green

blue

purple

for a cantilevered beam with
a concentrated end load:

what is the distribution of shear force?



red

orange

green

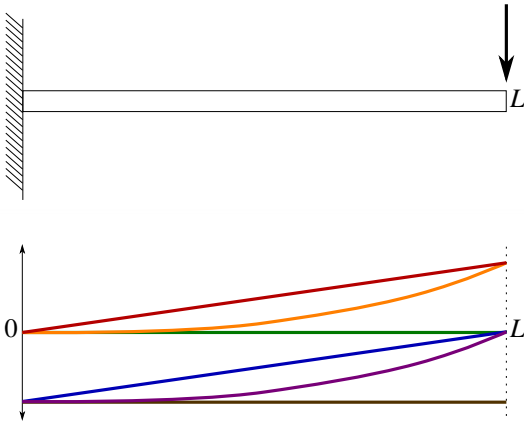
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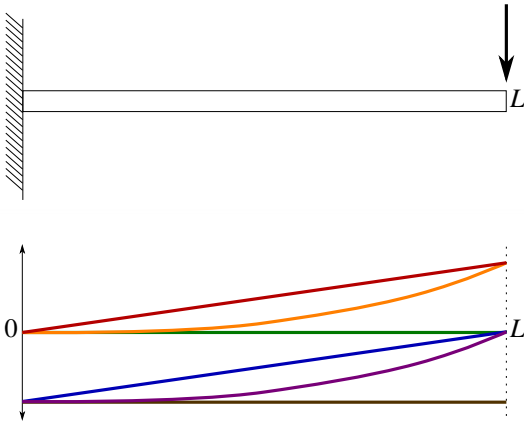
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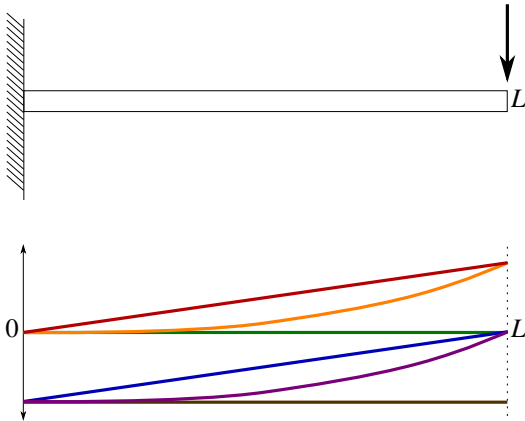
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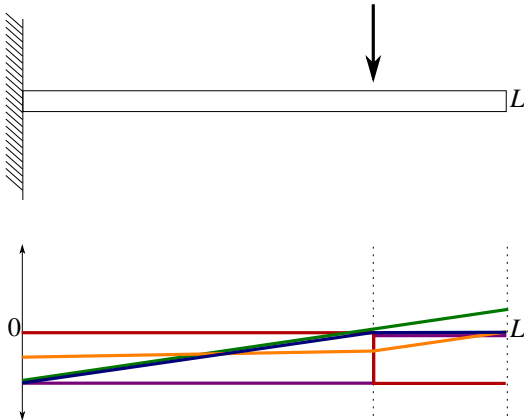
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purple

brown

for a cantilevered beam with
a concentrated load at an arbitrary point:

what is the distribution of shear force?



red

orange

green

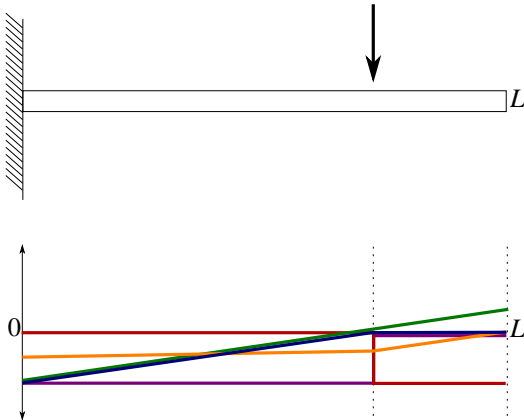
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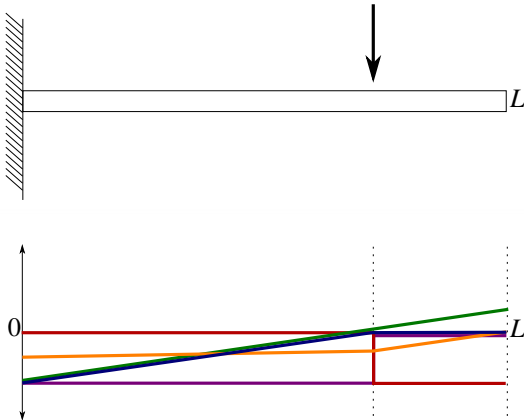
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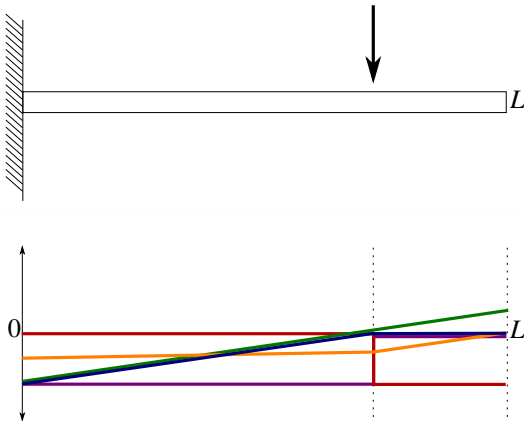
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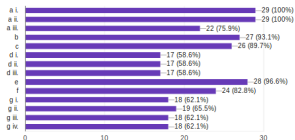
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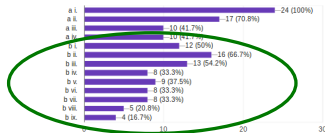
Exercise 1: blade deflection

29 responses



Exercise 2: preliminary tower design

24 responses



2b

- i Aksel Pettersen
- ii Ashwitha Thunga
- iii Maximilian Ruck
- iv Paul Daum
- v Daniel Stürmer

2b (contd)

- vi Axel Hecht
- vii Prit Patel
- viii Luca Conrad
- ix Nils Straub
- x (box missing → volunteer or Rachel)