**Problem-Solving Session Rules**

* Each team member must contribute to answering all the questions from the problem-session. You may lose up to 20% of your lab grade if you don't contribute.
* If a question requires you to write code, work with your teammates to write the code in this document (do not use PyCharm nor any IDE).
* Before leaving the meeting, make sure you download this document with your answers.
* You will probably need it later for the lab implementation.
* Check with your SLI or instructor your answers before leaving the meeting.

Do not forget to enter your name in the team members section.

**Team Members**

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1.

A picture containing clock

Description automatically generated

6 + 3 + 5 = 14 7 + 7 = 14

4 + 2 + 1 = 7\*1 = 7 7\*1 = 7

6 \* 2 + 3 \* 1 = 15 3 \* 5 = 15 4 \* 1 = 4 2\*1 + 1\*2 = 4

It is balanced

A picture containing clock

Description automatically generated

Not balanced

(60 + 30) \* 2 = 180 (40 + 80) \* 1 = 120

60\*1 = 60 (10+20)\*2 = 60 40 \* 2 = 80 80 \* 1 = 80

10\*2 = 20 20\*1 = 20 25\*4 = 100 15\*1+35\*2+5\*3 = 100

Q2

Diagram

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11 + 19 + 21 = 51 -> 51 \* 1 = 51 6\*2 + x\*3 = 51 x = **13**

28 + 14\*3 = 70 11+19+21+6+13 = 70

Q3

\_\_slots\_\_ = ‘weights’, ‘distance’

Weights: A collection of weight objects. Assume position of this weight is recorded in the Weight object.

Distance: The distance from the hanging point of this beam to the center point of the beam that hangs this beam. 0 if this beam is at the top.

Q4

def weight(self):

weight = 0

for w in self.weights:

weight += w.weight()

return weight

Q5

A picture containing text

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A close up of a antenna

Description automatically generated

Puzzle 1. (a) Scale factor: max((50+20+20),(70+40+20)/2) = 90Chart, timeline, box and whisker chart

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b)

Total width (extension) 30 + (90\*3) +60 = 360

Far left = 30 + (90\*2) = 210

Far right = (90 \* 1) + 60 = 150

Puzzle 2. (a) Scale factor: max((50+0+20)/2, (0+10+20), (90+70+20)/4) = 45

A close up of a antenna

Description automatically generated

(b)

Width (Extension) : 40 + (45 \* 7) + 40 = 395

Far left: 40 + 45\*5 = 265

Far right: 45\*2 + 40 = 130