EE 185 HW 3

Tate Stottmann,
Section ,
tstott@iastate.edu,

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Problem 1

To start we need to create a formula to measure the efficiency of our weights. Assuming we want it to take the least number of stones, and the least number of total weight to measure them all we can create a simple equation mirroring this. My equation is Val = Number of Stones * total weight of stones. From this we can start to elaborate on what is the best combination of stones. Our goal is to be as close to 43 exactly as we can. As 43 is the maximum weight we can have on one side, and therefore need. So we can use a 20 pound stone to reduce the values we need from 1 to 23, as we can add this one stone to take care of the rest. We can add a 10 pound to reduce it to 1 to 13. We can use a 3 pound and a 4 pound stone as well as a 6 pound stone to handle values 1 through 13. So we have now a total weight of 43 and a total ston count of 5. This brings our Val total to 215, which is the closest I have gotten with multiple setups.

Problem 2

a)

This chapter was all about form and function of objects. Essentially, what inventions are made of, and what can they do that was not thought of at

inception.

b)

I thought the motif of carrying weight, or load-bearing objects was funny and subtle in a way.

c)

This chapter is trying to engrain the thought that when you think of an invention or device you need to take into account the simplicity of it's form, and the mallubility of it's function. It needs to be easy to make and have uncountable uses.

d)

Not particulary, thank you for asking though.

e)

Really, the pictures get in the way and cut the flow of the text significantly.

Problem 3

Problem 4

a)

(x=4, y=6)
Polar coordinates are: (r=$52^{.5}$,θ = .9827π or 56.3°) First Quadrant.
(x=4, y=-6)
Polar coordinates are: (r=$52^{.5}$,θ = -.9827π or $-56.31°$) Second Quadrant.
(x=-1,y=-2)
Polar coordinates are: (r=$3^{.5}$,θ = 199.26° or 1.107π)
(x=-1,y=2)

Polar coordinates are: (r=$3^{.5}$,θ = .893π or $160.74^{.5}$)

b)

(5,-3π/4)
Cartesian coordinates are: (-3.536,-3.536)
(3,-230°)
Cartesian coordinates are: (.8665,-2.872)
(10,-3π/6)
Cartesian coordinates are: (0,-10)
(5,-130°)
Cartesian coordinates are: (3.752,-3.305)
(5,130°)
Cartesian coordinates are: (3.752,3.305)