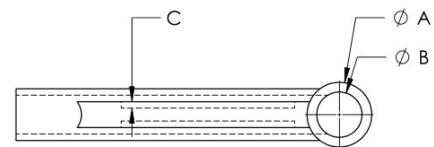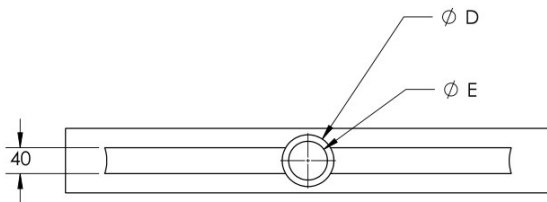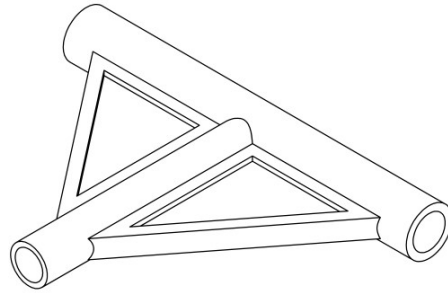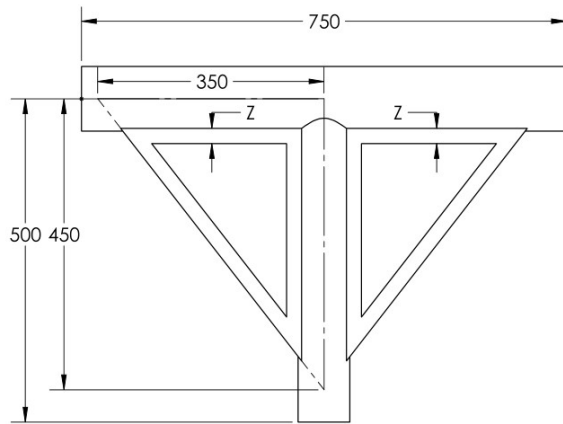**Question 1**

Create the part in Solidworks, using the following values for the given variables. Use the unit system MMGS, and Alloy Steel (density = 7700 kg/m^3). The cutouts on the webs are on both sides (there should be 4 total).

A = 100
B = 70
C = 10
D = 80
E = 60
Z = (C+E)/3

What is the mass of the part in grams?

    a) 6702.59

    b) 26207.45

    c) 53501.76

    d) 51609.93

Question
      2

Modify the part to have the dimensions given.

A = 110
B = 73 C = 11
D = 88
E = 60
Z = (C+E)/3
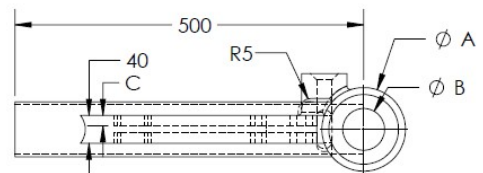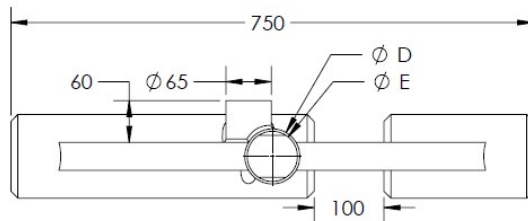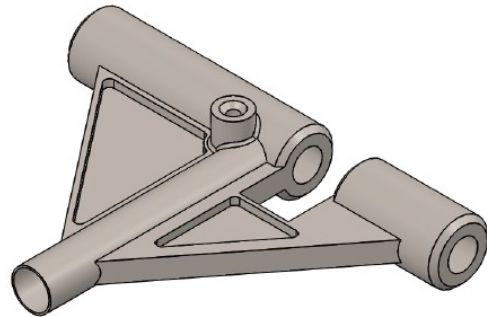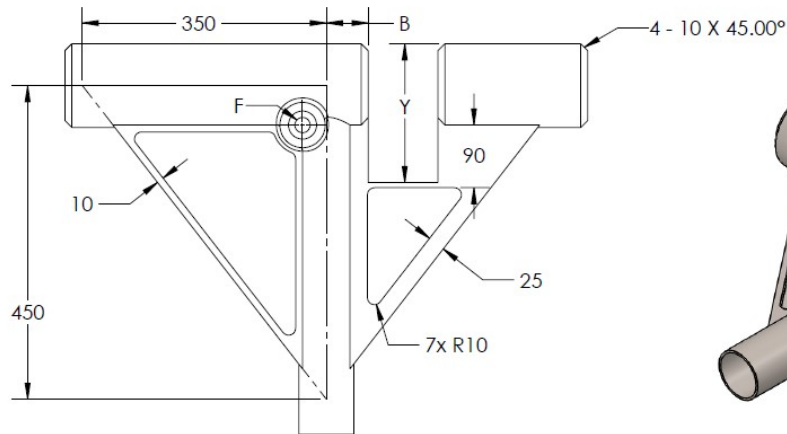
What is the new mass of the part?

    a) 51609.93
    b) 60966.53
    c) 57760.08
    d) 55024.29

Question
3

Use the following drawing to make modifications to the existing part. Some dimensions are the same, and some have been changed. Use the values listed (in mm) for the variables in the drawing. All holes are thru unless listed otherwise. The center point of the Hole Wizard is coincident with the 90 degree corner of the triangular web.

Material: Alloy Steel
A = 120
B = 60
C = 15
D = 79
E = 72
F = ANSI Metric Countersunk Head
            M20, Normal fit
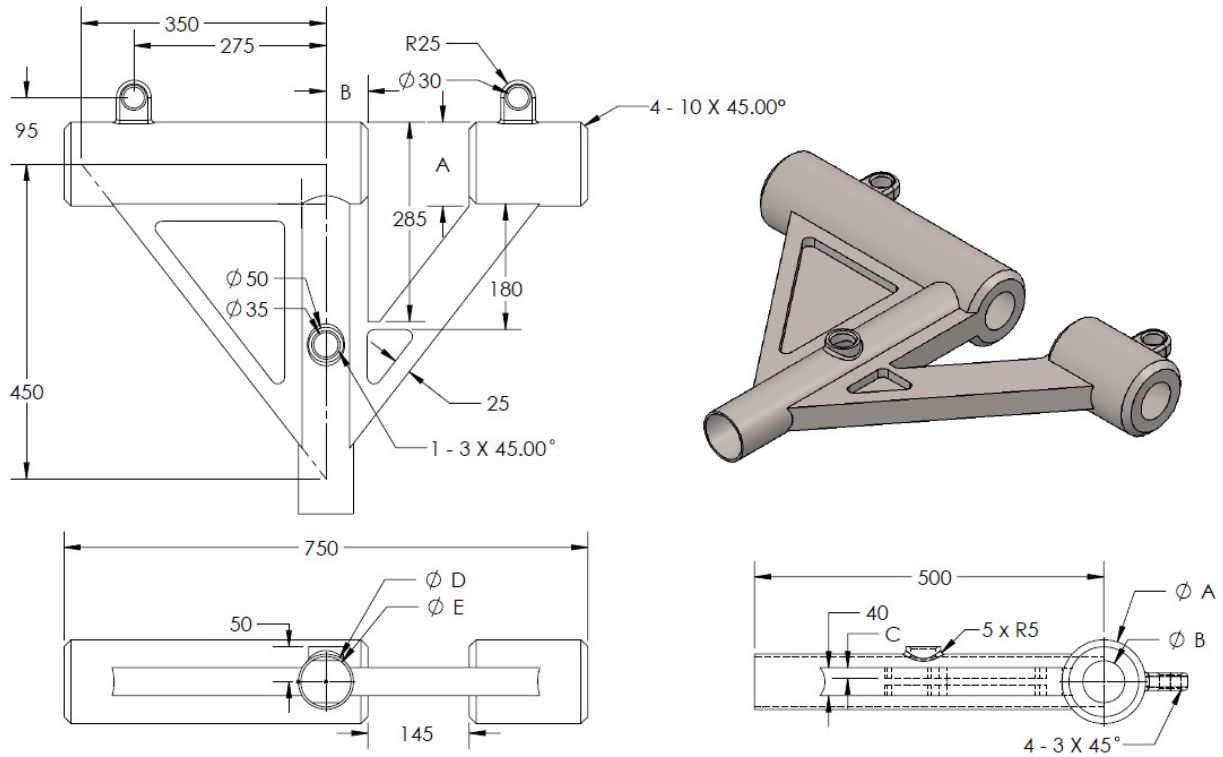   End condition: thru all
Y = A + D
Z = (C + E)/3

What is the mass of the part in grams?

a) 56984.12
b) 7633.30
c) 58776.43
d) 7856.37

Question

4

Use the following drawing to make modifications to the existing part. Some dimensions are the same, and some have been changed. Use the values listed (in mm) for the variables in the drawing. All holes are thru unless listed otherwise. Note the equation for Y has changed.

Material: Alloy Steel
A = 120
B = 60
C = 15
D = 79
E = 72
F = ANSI Metric Countersunk Head
      M20, Normal fit
      End condition: thru all
Y = (D-40)/2
Z = (C + E)/3

What is the mass of the part?

    a) 57152.62
    b) 59162.65
    c) 7683.46
    d) 57876.73

Question

5

Modify the part to have the dimensions given.

A = 125
B = 63 C = 18
D = 75
E = 72
Y = (D-40)/2
Z = (C + E)/3

What is the new mass of the part?

a) 60438.79
b) 60966.53

c) 7849.19
d) 58024.29

Question

Answers:

1) D

2) B

3) C

4) B

5) A