ENGG 202 W2013 Midterm 1 Answers

Version 1

Q1 W = 2.3 kN

most common wrong answer not accounting for cable force at right of platform

m = 1172 kg

937.8 kg

Q2

F1	1200	N
F2	800	N
F3	220	N

F_R= (920 **i +** -428.5 **j +** 400 **k) N**

|F_R|= 1090.89 N

θ_x = 32.50 ° **θ_y=** 113.13 ° **θ_z=** 68.49 °

Q3

angle for max M	**θ =**	**90 °**
angle for min M	**θ =**	**0 or 180 °**

Q4 M = 1750 Nm

F = 741.8 N

Q5 m = 78.5 kg

T_{AB} =	135.8	N
T_{AC} =	275.2	N
N =	635	N

Q6 F= 180 N

OBx = 0.4 mm

Mo= (120.16 **i +** -304.6 **j +** -24.03 **k) Nm**

Mx= 120.16 Nm