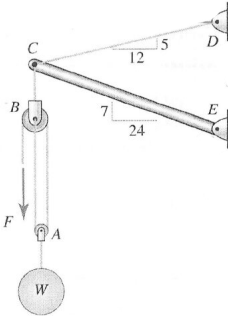


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1. The hoist shown is used in a machine shop to position heavy workpieces in a lathe. If the cable between pulleys A and B can support a force of 300 N, all other cables can support a force of 500 N and bar CE can support an axial force of 600 N, determine the largest weight, W , that can be lifted.

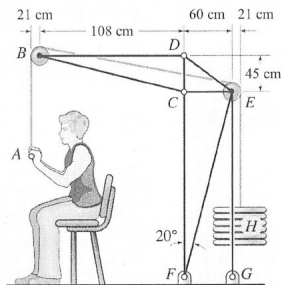


Solution can be continued on Page 3

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2. In the exercise machine shown, the stack of weights at H weighs 500 N. If cable segment AB is vertical, determine the force supported by each member of the machine.

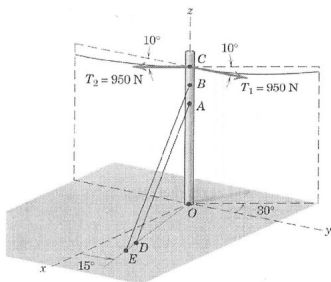


Solution can be continued on Page 5

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3. The vertical plane containing the utility cable turns 30° at the vertical pole OC , which is fixed at the base, at O . The magnitude of both tension forces, T_1 and T_2 , is 950 N . In order to prevent long-term leaning of the pole, guy wires AD and BE are utilized. If the two guy wires are adjusted so as to carry equal tension forces, T , which together reduce the moment at O to zero, determine the magnitude of the horizontal reaction force at O . Also, determine the required magnitude of T . Neglect the mass of the pole.



Dimensions: $\overline{OA} = 9\text{ m}$ $\overline{OD} = 8\text{ m}$
 $\overline{OB} = 11\text{ m}$ $\overline{OE} = 10\text{ m}$
 $\overline{OC} = 13\text{ m}$

Solution can be continued on Page 7