

# Homework Quiz Eligibility:

One week from homework review ...

No earlier but there will be a 1 - 2 week window.

TOTALLY UNANNOUNCED.

How to prepare ...

have correctly solved problems in your notes  
(have information about the question too.)

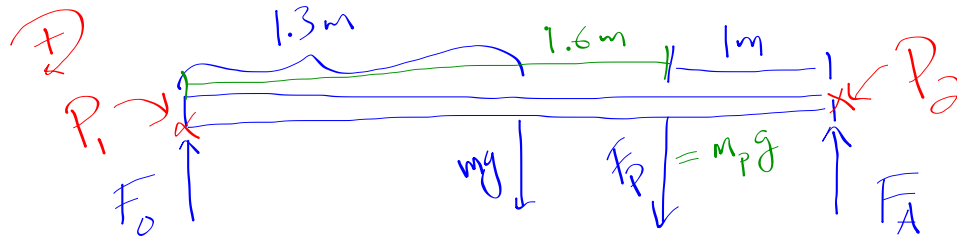
What it will look like ...

One hw problem - with different numbers &  
different "actors". VERY time limited.

What it's worth ...

10 points

2. Orin and Ann, two paramedics, rush a 60.0 kg man from the scene of an accident to a waiting ambulance, carrying him on a uniform 3.00 kg stretcher held by the ends. The stretcher is 2.60 m long and the man's center of mass is 1.00 m from Ann. How much force must Orin and Ann exert to keep the man horizontal? [Orin = 241 N; Ann = 376 N]



$$\sum \tau = 0 \quad (P_1)$$

$$(F_O)(0) + (mg)(1.3) + (m_p g)(1.6) + -F_A(2.6) = 0$$

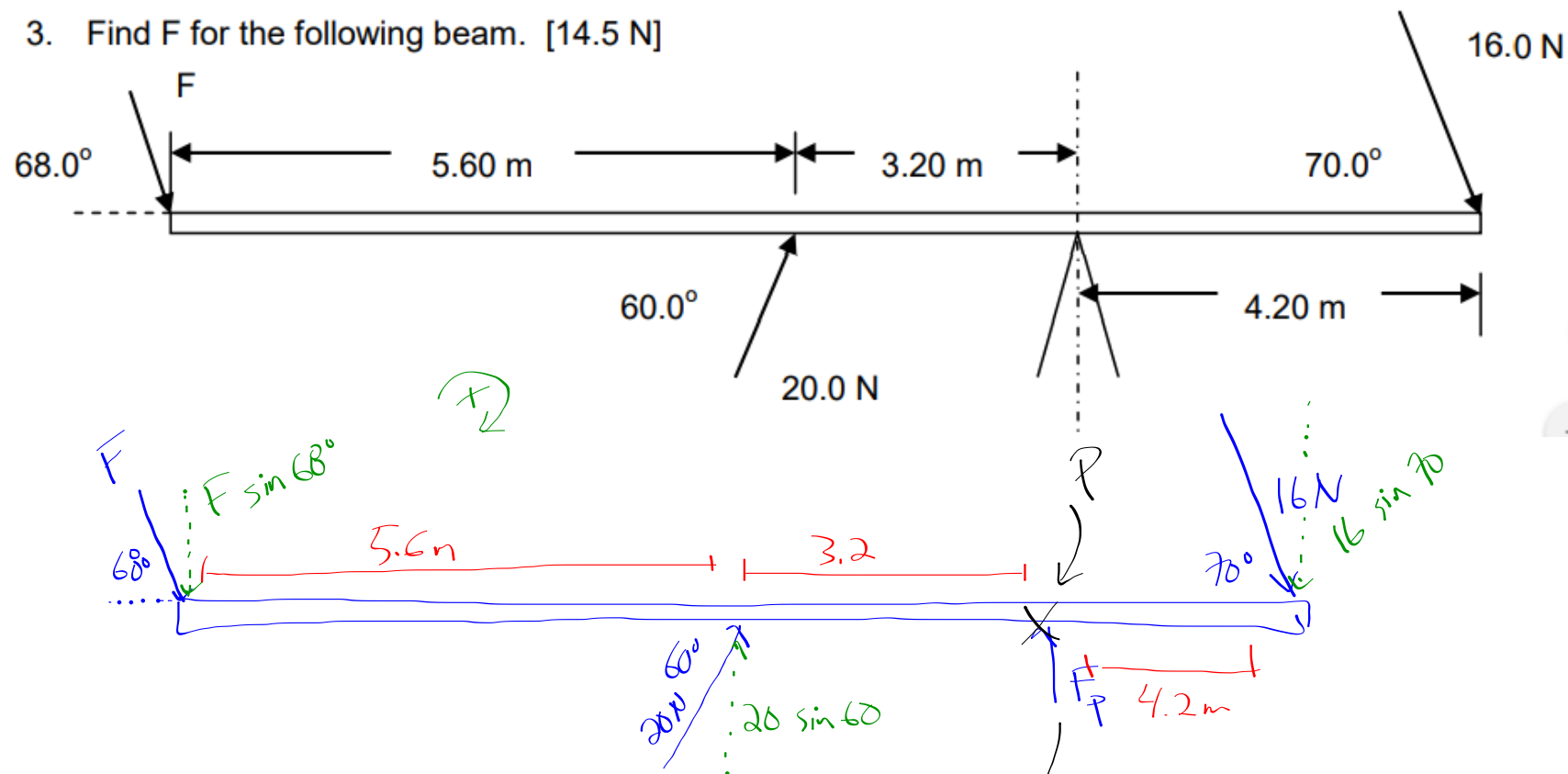
$$\checkmark F_A = \frac{(mg)(1.3) + (m_p g)(1.6)}{2.6}$$

$$\sum \tau = 0 \quad (P_2)$$

$$F_O(2.6) + -(mg)(1.3) + -(m_p g)(1) = 0$$

$$\checkmark F_O = \frac{(mg)(1.3) + (m_p g)(1)}{2.6}$$

3. Find  $F$  for the following beam. [14.5 N]



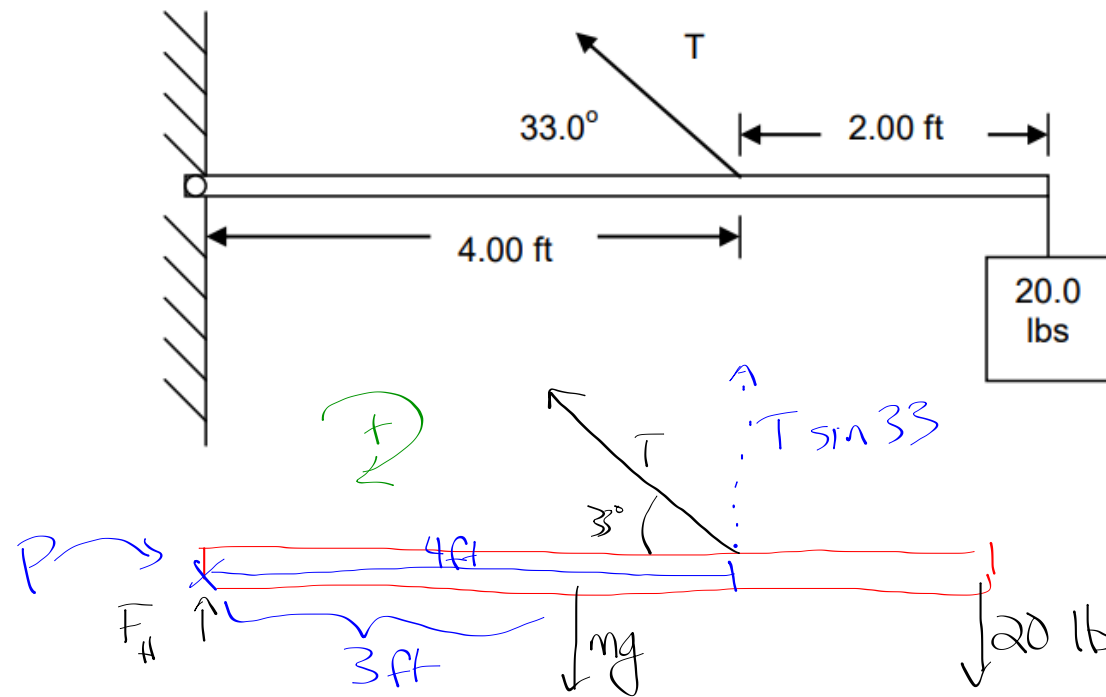
$$\sum \tau = 0$$

$$\tau = 0$$

$$-(F \sin 68)(8.8) + (20 \sin 60)(3.2) + (16 \sin 70)(4.2) = 0$$

$$F = \frac{(20 \sin 60)(3.2) + (16 \sin 70)(4.2)}{(\sin 68)(8.8)}$$

4. A 25.0-pound beam is supported by a string as shown. What is the tension? (Recall that the weight is taken at the center of the beam) [89.5 lb]



$$\sum \tau = 0$$

$$(F_H)(0) + (mg)(3) + -(T \sin 33)(4) + (20)(6) = 0$$

$$T = \frac{(mg)(3) + (20)(6)}{(4)(\sin 33)}$$

5. Find  $T$  if this beam has a length of 6.0 meters and a weight of 320 N. [ $T=272$  N]

