# Torque

- Doing the math
  - After picking the pivot add each force and multiply times the perpendicular distance to the pivot adjusting the sign based on the direction it will cause rotation. You can pick a direction that you want to be positive. Sum is = to zero
  - Remember that if the plank is about to rotate it will have zero force on a support opposite the pivot
- Picking a pivot point
  - Use the pivot to eliminate an unknown
  - The distance to the pivot is 0 so the torque from that point is 0
  - If something is going to flip or fall over use the point that it will rotate on as the pivot.
- $F \times s = Fs \sin\theta$
- $\sum t = 0$
  - The object will not be rotating in this class so the sum must be 0
- Think of a door if you push but the hinge it is har to open. Push at the door nob and it is easy