

STATIC & ROTATIONAL EQUILIBRIUM

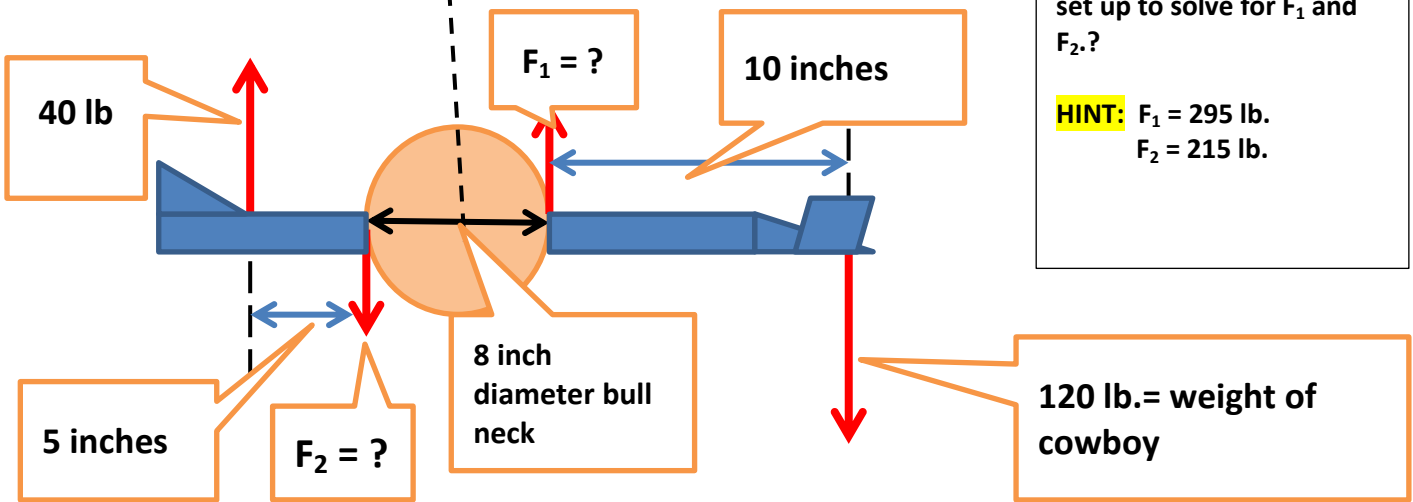
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Astride Rodeo's Professional and Amateur Worlds



Benjamin Carson of Utah Valley University working on a takedown in the N.C.F.R. steer-wrestling event



INTRODUCTION: This bull is trying with his neck to prevent being rotated to the ground with neck torques due to F_1 and F_2 in the counterclockwise direction. The cowboy is creating a clockwise torque as shown.

QUESTION: Find F_1 and F_2 the bull is producing in a futile attempt to keep the net torque = 0? Be sure to show the two equations you needed to set up to solve for F_1 and F_2 .

HINT: $F_1 = 295 \text{ lb.}$
 $F_2 = 215 \text{ lb.}$

CASPER, Wyo. — JR Vezain leads a double life that many young athletes might envy. A top contender to be the Professional Rodeo Cowboy Association's rookie of the year, he also recently completed his freshman year as a full-time college student on an athletic scholarship. Last week, while competing for Texas' Vernon College, Vezain rode four bucking horses long enough and well enough to win the bareback riding competition at the College National Finals Rodeo. The 19-year-old Vezain, who entered the tournament ranked 12th among P.R.C.A. money winners, **won \$3,261.20 at the C.N.F.R.** tops among the competitors here. The notion of collegiate athletes being paid for competing is anathema to the N.C.A.A., the organization in charge of the majority of athletics on that level. But the National Intercollegiate Rodeo Association, which oversees the sport outside the purview of the N.C.A.A., has sanctioned prize money since competition began on the collegiate level in 1949.