

## ENDS 231: Practice Quiz 1

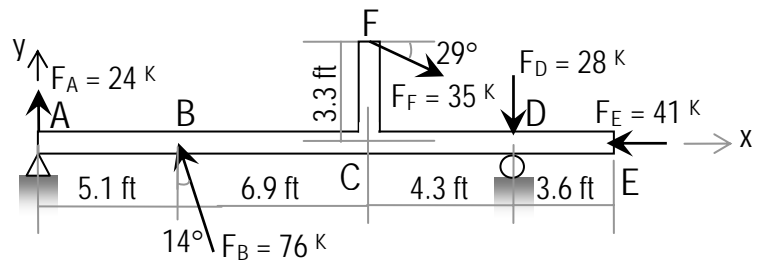
*Note: A one page (one sided) crib sheet is allowed during the quiz,  
along with a silent, **non-programmable** calculator.*

Clearly show your work and answer.

---

A structure has the coplanar, nonconcurrent force system as shown below.

- What is the magnitude and direction (with respect to  $+x$ ) of the resultant force of the force system?
- What is the resultant moment of the force system with respect to point A [or C or ...]?
- In an equivalent force system, the  $x$  component of the resultant force acts along the  $x$  axis. What is the horizontal location (size and direction) of the  $y$  component of the resultant force with respect to point A [or C or ...]?
- [some short question from the reading material]



Answers – Not provided on actual quiz!

- $R = 60.1 \text{ k}$ ,  $\theta = 118.6^\circ$
- $M_{@A} = -385.0 \text{ k-ft}$  (or  $M_{@C} = -1018.2 \text{ k-ft}$ )
- $x = 7.3 \text{ ft}$  to the left of A (or  $x = 19.3 \text{ ft}$  to the left of C) [when  $R_y = 52.77 \text{ k up}$ ]

**Disclaimer: Answers have NOT  
been painstakingly researched.**