1. Including a sketch, describe the vectors to be shown on the effective-force diagram for a rigid body in plane motion.

2. The slender bent rod $ABC$ with $\rho_L = 10 \text{ kg/m}$ is suspended as shown. Determine its angular acceleration $\alpha$ and the wire tensions $F_{BE}$ and $F_{CD}$ immediately after the wire $BF$ is cut.

1. Sketch: Suppose that a rigid body in plane motion has a mass $m$, an angular acceleration $\alpha$, a mass center $G$ accelerating with $\bar{a}$, and a moment of inertia $\bar{I}$ about its central axis. Then, the effective-force diagram for this body has (a) an effective force vector $m\bar{a}$ acting through $G$, (b) an effective moment vector $\bar{I}\alpha$ acting about $G$.

2. $\alpha = 0.827615$ $\alpha = 0.828 \text{ rad/s}^2$ $F_{CD} = 148.669$ $F_{CD} = 148.7 \text{ N}$ $F_{BE} = 497.576$ $F_{BE} = 498 \text{ N}$