

Al-Madinah International University

Faculty of Engineering,

Civil Engineering Department

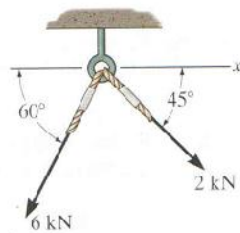
Applied Mechanics JAPD 1053

Homework Number 1

Due: November 12, 2014

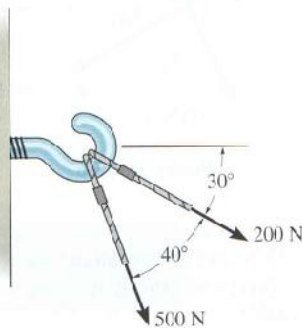
Answer all of the following problems; please follow the homework preparation guidelines provided on the course site: [www.aast-compeng.info](http://www.aast-compeng.info)

**F2-1.** Determine the magnitude of the resultant force acting on the screw eye and its direction measured clockwise from the  $x$  axis.



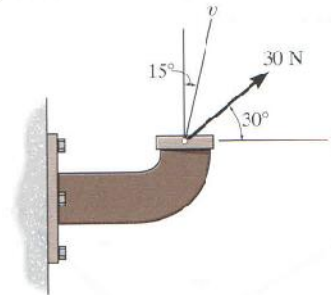
**F2-1**

**F2-2.** Two forces act on the hook. Determine the magnitude of the resultant force.



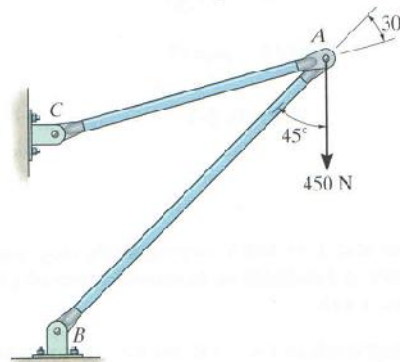
**F2-2**

**F2-4.** Resolve the 30-N force into components along the  $u$  and  $v$  axes, and determine the magnitude of each of these components.



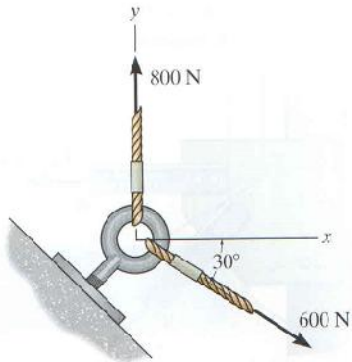
**F2-4**

**F2-5.** The force  $F = 450$  N acts on the frame. Resolve this force into components acting along members  $AB$  and  $AC$ , and determine the magnitude of each component.



**F2-5**

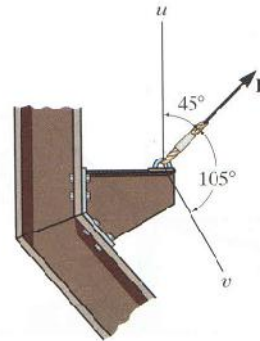
**F2-3.** Determine the magnitude of the resultant force and its direction measured counterclockwise from the positive  $x$  axis.



**F2-3**

**F2-5**

**F2-6.** If force  $\mathbf{F}$  is to have a component along the  $u$  axis of  $F_u = 6$  kN, determine the magnitude of  $\mathbf{F}$  and the magnitude of its component  $F_v$  along the  $v$  axis.



**F2-6**