\[ +7.5 \cos 45^\circ \]
\[ -11.5 \cos 60^\circ \]

\[ F_1 = 7.5 \text{ kips} \]
\[ F_2 = 11.5 \text{ kips} \]

\[ \theta = \tan^{-1} \frac{F_v}{F_h} \]

\[ R = \sqrt{F_h^2 + F_v^2} = \]
4. Three forces act on a hook. Determine the magnitude of the resultant of the forces. Neglect hook bending.

\[
F_2 = 1500 \text{ N} \\
F_1 = 1000 \text{ N} \\
F_3 = 750 \text{ N}
\]

\[
(F_2) \cos 20^\circ = 1212 \text{ N} \\
F_1 \cos 30^\circ = 866 \text{ N} \\
(F_2) \cos 20^\circ \cos 15^\circ = 1202 \text{ N}
\]

\[\{ \text{(A) 989 N} \] \[\text{(B) 1140 N} \] \[\text{(C) 1250 N} \] \[\text{(D) 1510 N} \] \]
\[ \sum F_y = 0 = -100\# + AC \cos 45^\circ \cos 60^\circ + CB \cos \theta \]

\[ \sum F_x = 0 = -AC \cos 45^\circ + CB \cos 30^\circ \]
1. What is the resultant $R$ of the system of forces shown?

\[ F_1 = 15\mathbf{i} + 25\mathbf{j} - 10\mathbf{k} \]
\[ F_2 = 20\mathbf{i} - 5\mathbf{j} + 15\mathbf{k} \]
\[ F_3 = -10\mathbf{i} + 40\mathbf{j} + 50\mathbf{k} \]

\[ R = 25\mathbf{i} + 32\mathbf{j} + 27\mathbf{k} \]  \(\text{Corrected in (A)}\)
\[ R = 32\mathbf{i} \]
\[ R = 60\mathbf{i} \]
\[ R = -10\mathbf{i} + \]
\[ R = 25\mathbf{i} + 60\mathbf{j} + 55\mathbf{k} \]
A diagram showing forces and moments. The forces include a 500 lb force labeled as D, an 800 lb force labeled as E, and a 2000 lb force. The moments are calculated as follows:

\[ \Sigma M_c = (500 \text{ lb})(5 \text{ ft}) - (800 \text{ lb})(5/\sqrt{34}) \times 5 \text{ ft} \]
4. Find the forces in members DE and HJ.

\[ \sum F_H = 0 \]
\[ \sum F_V = 0 = +160K + AB \left( \frac{20}{30} \right) \]
\[ AC = + AB \left( \frac{30}{43} \right) \]
4. Find the forces in members DE and HJ.

4 kips each

60 kips each

'6 panels of 30' each = 180'
4. Find the forces in members DE and HJ.

4 kips each

60 kips each

6 panels of 30' each = 180'