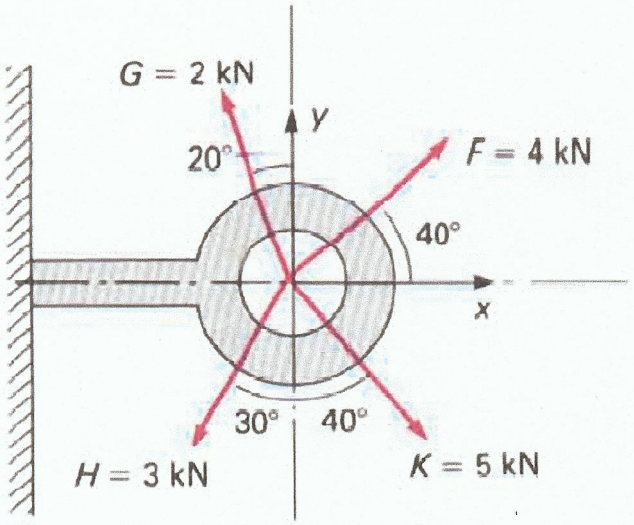
Resultant Force 3

The eyebolt shown below is intended to hold several cables which exert the forces shown. What is the resultant of these forces (limited to 5 kN) and what is the component pulling directly away from the wall (limited to 4 kN). Is the design safe?



$F_x = 4\cos 40 = 3.064$

$G_x = -2\sin 20 = -0.684$

$H_x = -3\sin 30 = -1.5$

$K_x = 5\sin 40 = 3.214$

4.09

$F_y = 4\sin 40 = 2.571$

$G_y = 2\cos 20 = 1.879$

$H_y = -3\cos 30 = -2.598$

$K_y = -5\cos 40 = -3.830$

-1.98

$|R| = \sqrt{4.09^2 + (-1.98)^2} = 4.54\ \text{kN} < 5\ \text{kN}$ OK

$|R_x| = 4.09\ \text{kN} > 4\ \text{kN}$ NO GOOD!