$|H|\sin 35\mathbf{i} + |H|\cos 35\mathbf{j} - |G|\sin 45\mathbf{i} + |G|\cos 45\mathbf{j} + 40\mathbf{j} = 0 \implies |H|\sin 35 - |G|\sin 45 = 0 \quad \text{and} \quad |H|\cos 35 + |G|\cos 45 + 40 = 0 \implies |H| =$

Force diagram of a mass on a slope.