Given a block of mass $m$ to be pulled upward along an inclined plane by a rope which makes an angle $\beta$ with the plane.

\[ \beta < \frac{\pi}{2} - \alpha \]

1) If the coefficient of friction is $\mu_k$, show that the work required to raise the block to a height $h$ is

\[ W = mgh \cdot \frac{1 + \mu_k \tan \alpha}{1 + \mu_k \tan \beta} \]

2) Show that pulling at an angle reduces the work required to do the job.