

HW6-1 Soln)

$$W = F \Delta x \cos \theta_{F, \Delta x} = 1100(37) \cos(0) = 40,700 \text{ Joules}$$

By the third law, the cowboy exerts 1100 N on the horse opposite to the displacement, so,

$$W = F \Delta x \cos \theta_{F, \Delta x} = 1100(37) \cos(180) = -40,700 \text{ Joules}$$

This result depends only on the force and displacement, not the rate at which the objects move.