

OPEN RESPONSE #5: ENERGY & MOMENTUM

Two athletes are lifting weights. Athlete X lifts 445 N a distance of 2 m in 4 s. Athlete Y lifts 445 N a distance of 2 m in 1 s. Assume that each athlete lifts the weights over his head the same distance from the floor.

- a. Calculate the amount of work each athlete does. Show your calculations and include units in your answer.
- b. Compare the amounts of work done by the two athletes. Explain your answer.
- c. Calculate the power **each** athlete uses. Show your calculations and include units in your answer.
- d. Compare the power used by athlete X with the power used by athlete Y. Explain your answer.