

## ENERGY & MOMENTUM

### OPEN RESPONSE #8

A winch is a device used to lift lobster traps out of the water and onto a lobster boat. The winch applies a force of 300 N to lift a trap a distance of 20 m in 12 s.

- a. Calculate the work performed by the winch to lift the trap. Show your calculations and include units in your answer.
- b. Calculate the power supplied by the winch to lift the trap. Show your calculations and include units in your answer.

The winch then lifts a second trap.

- c. Explain how the winch could perform the same amount of work but supply a greater amount of power when lifting the second trap.
- d. Explain how the winch could supply the same amount of power but perform a different amount of work when lifting the second trap.