

Big Exam #1

Imagine yourself jumping horizontally (northward) off the side of a small boat by pushing with your legs.

- a) Describe as completely as possible what the boat does during this process.
 - i) Make a drawing
 - ii) What lens did you use?
 - iii) Why did you pick that lens?
 - iv) Answer the question.

- b) Let's say you have a mass of 70 kg, the boat has a mass of 140 kg and you have a velocity of 6 m/s, horizontally after you push off. What's the speed of the boat?
 - i) What lens did you use?
 - ii) Why did you pick that lens?
 - iii) Answer the question.

- c) What was the average force from your legs on the boat?
 - i) What lens did you use?
 - ii) Why did you pick that lens?
 - iii) Answer the question.

- d) What was the average acceleration of the boat? ... follow the same three as above.

- e) About how much work did I do in this process?... follow the same three as above.