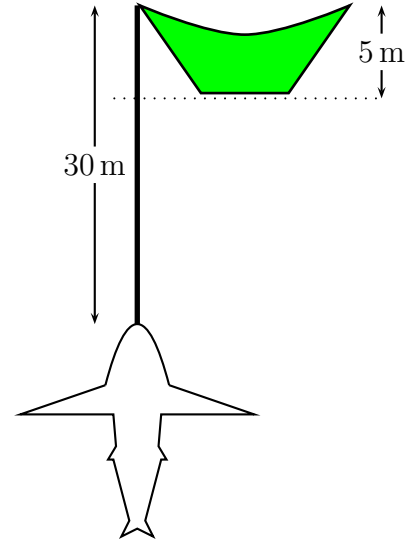


## Worksheet Victory

In this, our last class, I'd be grateful if you'd consider some non-math questions about how best to run DHSP online. You are the only ones who have ever done it, so you are the experts.

1. Sally, working as a marine scientist, is reeling in a large shark she caught onto her boat. The edge of her boat lies 5 meters above the water as shown in the figure below. The total length of the sharking line is 30 meters. The shark weighs 500 newtons in water, and her sharking line weighs 30 newtons per meter out of water, and 10 newtons per meter in water. The figure below depicts this situation - the sharking line is the thick dark line and the boat is shaded. Write an expression which gives the work Sally does pulling the shark's snout to the surface of the water.



2. (Fall, 2014 (the robot chicken semester)) Franklin, your robot, is zipping around the kitchen making his famous “Definitely Not Poison!” soup. His coordinates in the  $xy$ -plane are given by the parametric equations

$$x = t^2 - t \quad y = -\sin(\pi t)$$

$t$  seconds after he starts making soup. Assume that both  $x$  and  $y$  are measured in meters.

- (a) Calculate  $dx/dt$  and  $dy/dt$ .
  - (b) Find all times when Franklin’s velocity is zero.
  - (c) Find Franklin’s **speed** when  $t = 2$  seconds.
  - (d) Write an integral that gives the distance traveled by Franklin during his first 5 seconds of zipping around.
3. Most advice on how to run online classes says to make as much of the class as possible “asynchronous.” That is, make it possible for students to do work on their own schedule, not while everyone is together. Is there room for some asynchronicity in DHSP? Can you imagine how it would work? Could it work without grades? Any ideas you have would be helpful.
  4. We settled on a strategy of all working on one problem at a time, and then having me go over it afterward. Did you think that was the best strategy? Did I need to spend as much time as I did going over problems? Would you have preferred longer blocks of time and more freedom to pick what to work on?

5. We settled on a combination of Zoom, Google Docs and online whiteboards for use in class, with a windowing framework and a daily menu to organize things. Was this a good combination of tools? Have you used others that might work better, or that we could switch to for some variety?
6. Was writing on the boards in my office an effective way to communicate? Can you think of, or have you seen, a better way to communicate the same type of information?
7. When we switched to online, we already knew each other and had a community in place. If DHSP is online this fall, that won't be the case; we will be meeting each other for the first time online. Do you have some ideas how I could foster a community spirit in that situation?
8. We had a review session before the last exam, and it was very quiet. Was it effective in giving you a time to study? Could we use our online class time better right before the exam?
9. I made some videos before the last exam in which I went over the problems on our practice exam. Was that useful to you? How could they be improved?