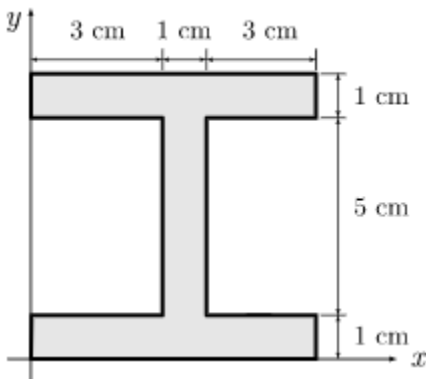
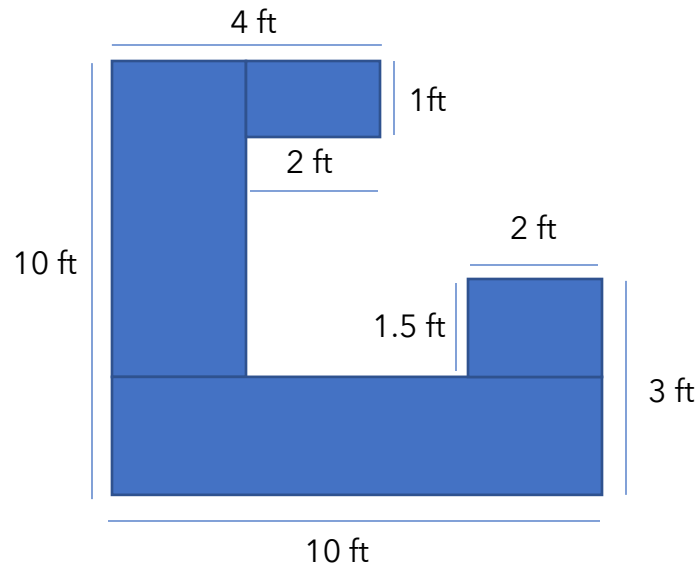


## Statics SI Worksheet Week Ten

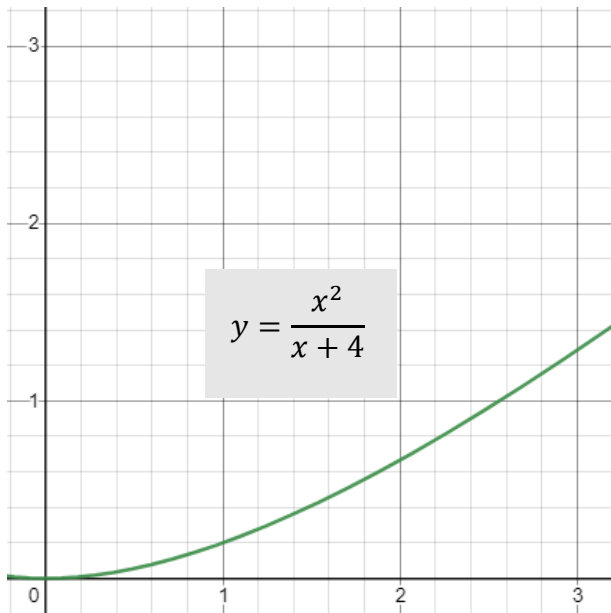
1. The center of gravity is...
  - a. My favorite thing ever
  - b. The center of the object
  - c. The point where the total weight of the body passes through
  - d. The point where half of the weight of the body passes through
2. The center of mass is...
  - a. The same as center of gravity, just divided by 9.81 or 32.2
  - b. Not my problem
  - c. The point where the total mass of the body passes through
  - d. A and D
3. Density has unit of...
  - a. psf (lb/ft<sup>2</sup>)
  - b. pcf (lb/ft<sup>3</sup>)
  - c. slugs, the live kind
  - d. slugs per cubic foot
4. If you have a chunk of steel that has varying densities, can you treat it as one composite volume/area during center of gravity calculations?
  - a. yes
  - b. no
  - c. yes and no
5. Where is the centroid of the steel beam cross section?



6. Someone dumps a massive sectional couch in the field just north of Laramie with the rest of the junk that is up there (refrigerators, cathode ray TVs, etc.). If the garbage people have to come pick it up with a crane and it isn't allowed to swing around, where should they attach their crane to the couch?



7. You're Spiderman now (congrats) and you have to pick up a giant chunk of glass to throw at an evil bystander so you can save the world. If the chunk of glass is given by the function below and has x bounds of 0 to 3, where do you need to grab it with your web so it doesn't swing and hit a non-evil bystander?



8. I am playing mountain frisbee golf with Jonathan and the bench is jank. I put his frisbee bag and his beer down so I can outdrive him at the hole. The frisbee bag weighs 30lbs and the beer weighs 1lb. The whole thing is slanted, the right support has a fixed connection, and the left support is a roller because the thing was not made by an engineer. If the bench can be represented by the image below, what are the reactions at the supports?

