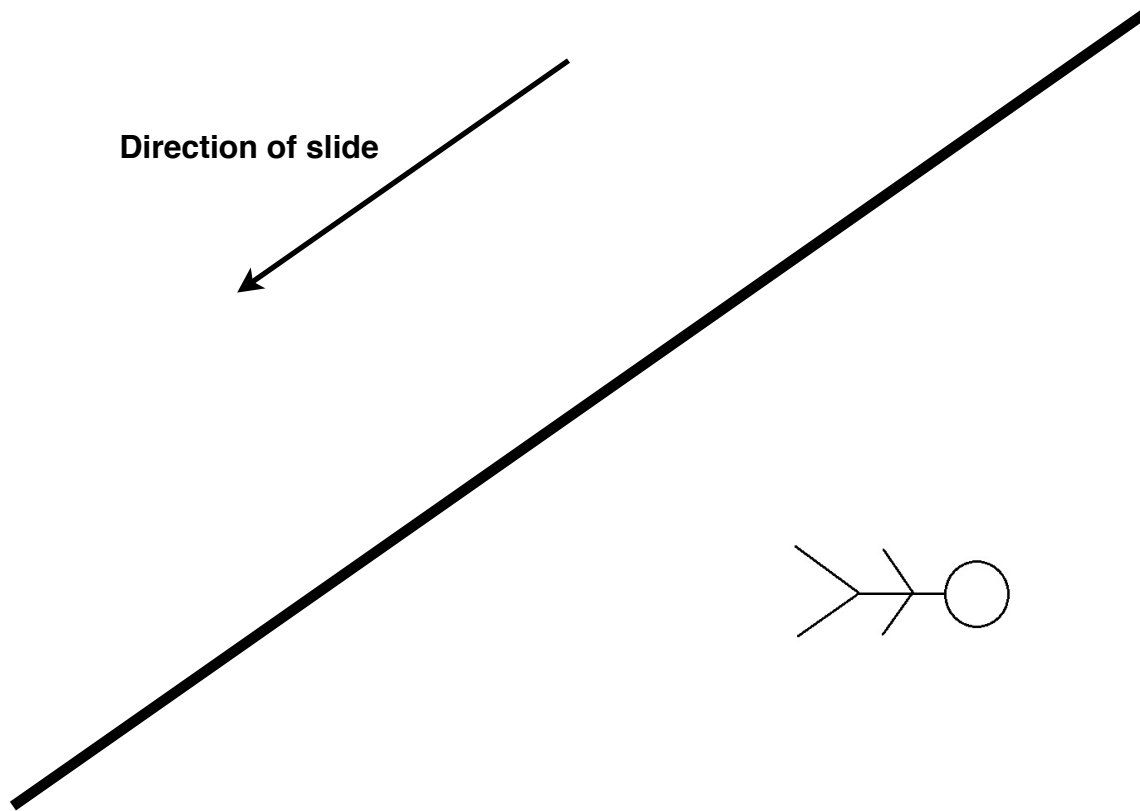


AVALANCHE!

You have been out snowboarding in the backcountry and your companion has been caught in an avalanche. You've found her location using your transceiver, have probed for her burial depth, and are now ready to dig her out. Every second that she is buried in the snow is crucial - what is the fastest way to dig her out of the avalanche? Be explicit about what assumptions you make.



Some key facts about avalanches you might need or want to know:

- They occur more frequently on slopes greater than 25° ($35-40^\circ$ is the hot spot)
- The snow in an avalanche runout is extremely hardpacked - the less you need to shovel, the better
- Only about a third of people who are completely buried in an avalanche for 15 minutes survive; after 30 minutes the survival rate falls to about 10%