

OSU Academic Integrity Statement

During this quiz you are not to receive information, nor communicate with anyone, about the form, content, length, or difficulty of this quiz. Additionally, you are not to use any unauthorized resources while taking this quiz.

The allowed resources are: any notes you have collected during this course (handwritten, printed, or saved locally on your computer), blank sheets of paper or a digital tablet, writing utensil, a ruler, a protractor, and a non-communicating calculator. **Accessing the internet** while taking the quiz for any reason other than downloading, viewing, or turning in the quiz **is strictly prohibited**.

Receiving information or discussing details about this quiz between the time of its release and a time 48 hours later is strictly prohibited and is in violation of Oregon State University's Code of Student Conduct.

<https://studentlife.oregonstate.edu/studentconduct/academicmisconduct>

Any incidence of academic misconduct will be dealt with in accordance with Oregon State University's policies.

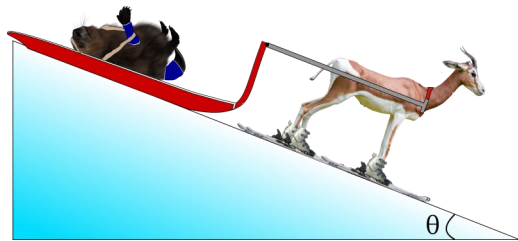
Physics 201

Weekly Quiz 7 | Ecampus

11/11/2020

Collaboration is not allowed. You will have 30 minutes to download, solve, take pictures, AND upload this exam to Gradescope.

1. After Benny Beaver takes a fall in the World Skiing Championships, he is rescued by Hope, the taupe antelope. Hope, on their skis, slides down the mountain with Benny, tied on top of a sled, sliding behind, as pictured. Connecting Hope to Benny and the sled is a metal pole that is parallel to the surface of the mountain. The metal pole is attached in such a way that it can only exert forces parallel to the mountain surface. The coefficient of kinetic friction between the sled and the surface of the snow is 0.08, while the coefficient of kinetic friction between Hope's skis and the surface of the snow is 0.16. Together, Benny and the sled have the same mass as Hope. The slope of the mountain is 30 degrees with respect to the horizontal.



- (a) What is the magnitude of their acceleration? Find a numerical answer that does not depend on the mass of Hope or Benny and the sled.
- (b) Are Benny and the sled pushing down the incline on Hope, or pulling up the incline on Hope? Explain your reasoning thoroughly using any combination of words, math, pictures, etc.