

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>

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Physics 201

Weekly Quiz 4 | Corvallis Campus

10/21/2020

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

1. In an atmospheric science experiment, Benny launches a model rocket from rest on the Earth's surface. For the first 5.00 seconds of its flight, assuming a standard coordinate system, Benny measures the rocket's acceleration to be $\langle 0, 14.73 \rangle$ m/s². At exactly 5.00 seconds into the flight, the thrusters on the rocket turn off.
 - (a) What is the largest height above the Earth's surface that the rocket reaches? (assume no air resistance)

Consider the following table of times when answering parts (b) and (c) (Note: you do **not** need to find values for these times)

t_0	Time of launch
t_5	Time when thrusters turn off
t_{top}	Time when rocket reaches highest elevation
t_{crash}	Time when rocket lands back on Earth

- (b) Over which time intervals (or between which of the above times) is the rocket accelerating? Briefly explain your reasoning in words, phrases, diagrams, etc.
- (c) Over which time intervals (or between which of the above times) is the rocket slowing down? Briefly explain your reasoning in words, phrases, diagrams, etc.