

General Physics I–Honors: PHYS 101H (Fall 2023)
Quick quiz 7

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Instructions

These quick quizzes are low-stakes assessment tools to help cement your understanding of our material. They will help you remember the key facts and can serve as a study guide to help you focus on material you are less familiar with. These quizzes do not contribute to your grade and are for your own use.

1. **Without looking at your notes or the textbook, and without consulting with your neighbour**, write your answer to each question in the **first column**.
2. Discuss with your neighbour and use your notes or the textbook as needed to answer each question and write your answers to each question in the **second column**. You should complete the second column, but do not add anything to your first column.

There are four questions.

Question 1

Write down Kepler's laws, both in words and equations.

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Question 2

Gliese 667Cc is an exoplanet (a planet outside our solar system) orbiting a red dwarf about 22 light-years from Earth, and is about 4.5 times as massive as the Earth. What is the escape velocity on Gliese 667Cc, relative to the escape velocity here on Earth, and assuming the radius of Gliese 667Cc is approximately 1.5 times larger than the Earth's radius?

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Question 3

Do astronauts in the International Space Station in orbit around the Earth experience gravity?

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Question 4

Two cups are filled to the same level with water. One of the two cups has ice cubes in it. When the ice cubes melt, in which cup is the level of the water higher?

- (a) The cup without ice cubes.
- (b) The cup with ice cubes.
- (c) It is the same in both.

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