

General Physics I–Honors: PHYS 101H (Fall 2022)
Quick quiz 8

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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

Describe the conditions required for ideal fluid flow.

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Question 3

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?



Question 4

In electricity and magnetism, there are both positive and negative charges. Two like charges repel, and two unlike charges attract. In contrast, the gravitational force appears to only be attractive. Why?¹



¹See this New Scientist [article](#), "Gravity mysteries: Why does gravity only pull?" [10 June 2009] for more discussion of this issue.