

Learning Intentions

- Learn to apply problem-solving skills to a question about gravitational forces.

Question

1. In a faraway galaxy, there are 2 planets with equal radii, r . The distance between their centres is 6 times the radius of either planet. However, they are made of different materials, so one planet has 4 times more mass than the other.

An astronaut decides to park her spaceship between the two planets, such that the force of gravity on her spaceship from the denser planet exactly matches the force of gravity from the less dense planet.

- a. Where does she park?
- b. Where does she park if one planet has 25 times more mass than the other?

Answers

1.
 - a. She should park r meters above the surface of the less massive planet.
 - b. She should park on the surface of the less massive planet.