Physics: Gravitation # 1 Objectives: P3.1b, 3.1A, P3.6A,B,C,d

Directions: Please show knowns, formula and solutions for full credit.

- 1. If the mass of two objects is each doubled, what happens to the force?
- 2. If the masses remain constant, but the distance of separation is reduced to ¹/₂ the original distance, what happens to the force?
- 3. If the masses remain constant, but the distance of separation is reduced to ¹/₄ the original distance, what happens to the force?
- 4. If both the masses and the distance of separation are doubled, what happens to the original force?
- 5. If one of the masses is doubled, the other remains the same, and the distance between them is tripled, what happens to the force?
- 6. If two stars pull on each other with a certain force, how would it change if the mass of each star became three times as great and the distance between them tripled?
- 7. If your mass is 90kg and your friend's mass is 120kg. What is the force of attraction between each of you if the distance is 2 m?

8.	An experiment showed that the attraction between a 5kg and a 5770kg mass was
5.7	E -6 n. How far apart were the masses?

knowns form	ila solution
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9. If you weighed 637n on earth, how much would you weigh on Mars?(mass= 6.37 E 23 kg radius= 3.43 E 6 m)

knowns formula solution

10. The radius of the sun is 110 times that of the earth and its mass is 330,000 times the earth's. What would 1 kg of matter on the sun weigh?