

Perimeter Dark Matter Online Game  
Worksheet #1

1. Match the following game graphics to their descriptions:

a. Black hole



b. Dark matter



c. Star



d. Brown dwarf



2. In the game, if a galaxy is too bright, you can:

- a. Add dark matter
- b. Remove dark matter
- c. Add stars
- d. Remove stars

3. What changes if you add dark matter to a galaxy?

- a. Mass
- b. Brightness
- c. Both mass and brightness
- d. Neither mass or brightness

4. What can you add to a galaxy that increases mass and brightness?

- a. Dark matter
- b. Stars
- c. Black holes
- d. Brown dwarf

5. The observed speed of stars was:

- a. Faster than theory predicted
- b. Slower than theory predicted
- c. In agreement with theory

6. Galaxies seem to be:

- a. Heavier than theory predicted
- b. Lighter than theory predicted
- c. In agreement with theory

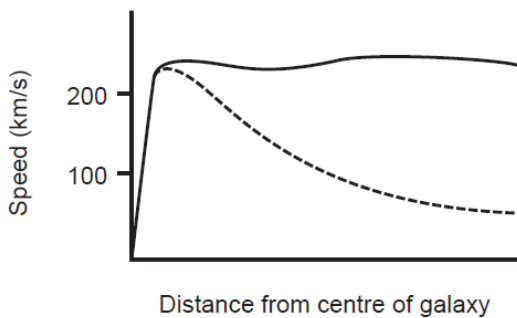
7. What changes if you add dark matter to a galaxy?

- a. Mass
- b. Brightness
- c. Both mass and brightness
- d. Neither mass or brightness

8. The mass difference between theory and observation can't be stars or other luminous objects because:

- a. If the mass difference was stars, the mass would be too great.
- b. If the mass difference was stars, the mass would be too small.
- c. If the mass difference was stars, the brightness would be too low.
- d. If the mass difference was stars, the brightness would be too bright.

9. In the following graph, the solid line is:



- a. Observed speeds
- b. Expected speeds

10. Dark matter is called “dark” because it:

- a. Only emits high-energy radiation such as X-rays and gamma rays.
- b. Only emits low-energy radiation such as microwaves and radio waves
- c. Reflects light but does not emit other radiation like stars do
- d. Does not emit or reflect any type of radiation or light

11. Which of the following is true?

- a. Physicists know exactly what dark matter is.
- b. Physicists have no idea what dark matter is.
- c. Only some physicists know what dark matter is made of.
- d. Physicists have some ideas about dark matter, which they are currently testing by experiments.