

- 1) What is a rotation curve? What do they tell us about galaxies?
 - b) Why have rotation curves played so prominent a role in the dark matter story?

- 2) Draw and label a rotation curve for each of these 3 situations. Make sure distances are labeled clearly.
 - a) All of a Galaxy's mass is concentrated in the center Bulge.
 - b) The Galaxy has constant Mass density within 20,000 LY's , but no mass outside this region
 - c) The Galaxy has constant Mass density within 20,000 LY's , but no mass outside this region and then increases proportionally with distance outside that region.

- 3a) What is Dark Matter? How does it behave?
 - b) What are some possible candidates for being the Dark Matter particle or substance?
 - c) Why is Dark Matter essential in the formation of life on Earth? This may take a few steps to explain.

- 4) What is a Quasar?
 - b) Where did they get their funny (sort of) name from?
 - c) What does the origin of their sort of funny name imply about the size of the region from which this immense luminosity emanates from?

- 5) The luminosity in a quasar is formed in a region
 - a) The size of a Milky Way galaxy
 - b) a cluster of stars
 - c) The Solar System

- 6a) What is the primary source of a quasar's luminosity?
 - b) Why do we think this is the mechanism for generating this incredible luminosity?