Name: _____

ASTR500: Mock Cumulative Exam Question #4
Cats and Dogs, Hair and a Hero: A Quintet of New Milky Way Companions (Belokurov et al. 2007)
24rd February, 2009 – Malynda Chizek

Consider a satellite galaxy located 50 kpc from the Milky Way, with a half-light radius r_h of $5'$ and surface brightness $\mu = 28$ mag/$\square$. Calculate (a) the absolute magnitude (assuming no reddening), (b) the luminosity (in solar units), and (c) the mass expected for a single star of equivalent magnitude.

Compare the properties of such a star to those of the expected stellar populations for the dwarf galaxies discussed in this paper.