# MATH 348 Reading Questions

Configuration Spaces and Section 6.1                                                                    NAME

*Answer the following questions, which will be checked for completeness at the beginning of the next class.*

*First, read "Configuration Spaces and Phase Spaces," linked from the course website*

1. How does a *configuration space* differ from a *phase space*?

2. What is a *linkage*?

3. Briefly explain why the configuration space in Example 3.30 is topologically equivalent to $S^1 \times I \times I$, where $I$ is a closed interval.

4. Briefly explain why the phase space in Example 3.33 is $\mathbb{R}_+ \times \mathbb{R}$.

*From our text, read the Interlude on page 89 through through page 92 of Section 6.1.*

5. On page 92 of the text, how does $f_t(x)$ interpolate between the functions $f(x) = 1 + x^2(x-2)^2$ and a constant function?

6. What does it mean for maps $f$ and $g$ to be *homotopic*?