Midterm Quiz, CS 39, Oct. 16, 2017

Your Name: ______________________

Some easy, personal, warm-up questions:

In a typical week, how many times do you access some of the web pages of CS 39? : _______

On your computer, do you have a bookmark that leads directly to the CS 39 web pages? : ___ (YES) ___ (NO) ___

Brief questions requiring short (numerical or binary) answers:

How many edges are in the complete graph $K_{8}$? : _______

Can the bipartite “utility” graph $BG_{3,6}$ (3 homes, 6 utilities) be embedded crossing-free on a torus surface? : ___ (YES) ___ (NO) ___

How many group elements are there in the symmetry class $D_{9h}$? : _______

What is the symmetry class of a typical chair (Not a barstool!), both in Schoenfliess notation – and in Conway notation? : ______ – ______

These questions also require a few words:

What is the maximal amount of symmetry that a closed handle-body of genus 9 may have? : 
Give an example; explain. : ___________________________________________

What is the maximal amount of symmetry that a closed handle-body of genus 11 may have? : 
Give an example; explain. : ___________________________________________

Can you find a surface with $EC = genus = 0$? (Or is this not possible?)
Describe such a surface: : ___________________________________________

Can you find a surface with $EC = genus = 1$? (Or is this not possible?)
Describe such a surface: : ___________________________________________
Surface Analysis and Classification: Fill in the blanks below each image:

B = ___  S = ___  EC = ___ / B = ___  S = ___  EC = ___ / B = ___  S = ___  EC = ___
Symm.: ___  Genus= ___ / Symm.: ___  Genus= ___ / Symm.: ___  Genus= ___

B = ___  S = ___  EC = ___ / B = ___  S = ___  EC = ___ / B = ___  S = ___  EC = ___
Symm.: ___  Genus= ___ / Symm.: ___  Genus= ___ / Symm.: ___  Genus= ___