Disclaimer

Problems seen in this study guide may resemble problems relating mainly to the pertinent homework assignments. Reading this study guide and solving the practice problems is not a sufficient level of studying for this exam. Students should also review the relevant reading material and PowerPoint slides as questions will be asked from those places as well. Please remember that the complexity of some of the practice problems may exceed that of any corresponding exam problem.

Exam Specifications

- Please see the 1186 Final Exam Study Guide
Content Review

- Below is contained the content and learning objectives that will be tested on this exam. Not all learning objectives will be tested exactly as read, however students should use this material to keep track of what they need to be reviewing.

Solidworks
a. Intro to solid modeling
b. Extrude and Revolve
c. Geometric constraint modeling, dimensional constraint modeling
d. Feature based modeling
e. Extracting drawings + dimensioning
f. More dimensioning
g. Assembly modeling constraints
h. Navigate the Model – Tree and answer questions about specified actions..dimensions/constraints, etc

Associated learning objectives
- Reproduce SolidWorks parts using features that include extrusions, revolutions, geometric and dimensional constraints, assembly modeling constraints and advanced modeling techniques.
- Identify possible geometric modeling constraints in different sets of lines on a 2-D sketch.
- Compare fully defined and under-defined sketches using knowledge of dimensional and geometric constraints.
- Question how to create a part more efficiently (in a fewer or certain number of steps) with regards to feature-based modeling.
- Project into drawing and dimension (measure distance or mass)
- Compare fully defined and under-defined sketches using knowledge of dimensional and geometric constraints.
- Demonstrate an ability to fully define a complex (more difficult to correctly constrain) assembly of parts to be manufactured.
- Use knowledge of fully defined sketches and assemblies to complete an assembly from scratch.
Practice Problems

Directions: Create Solidworks part files of each part shown.

Problem 1
Problem 2

Problem 3
Problem 4
Directions: Finish the Solidworks assembly files of each assembly shown. (Seed files and remaining parts are given on the website) Take a screenshot of the isometric of each assembly and give the weight of each part (in lbs). (Assemble the circuit so that each chip is ~0.379 inches from each edge)

Problem 5
Problem 6

Problem 7

OBJECT IS SYMMETRICAL ABOUT ALL AXES

SECTION A-A
1. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 1 and 9 to produce the final sketch on the right.
   a. Equal
   b. Perpendicular
   c. Collinear
   d. None of the above

2. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 2 and 3 to produce the final sketch on the right.
   a. Coincident
   b. Perpendicular
   c. Collinear
   d. None of the above

3. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 3 and 15 to produce the final sketch on the right.
   a. Parallel
   b. Perpendicular
   c. Concentric
   d. None of the above

4. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 4 and 5 to produce the final sketch on the right.
   a. Parallel
   b. Perpendicular
   c. Collinear
   d. Coincident
5. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 5 and 3 to produce the final sketch on the right.
   a. Tangent
   b. Perpendicular
   c. Collinear
   d. None of the above

6. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 6 and 12 to produce the final sketch on the right.
   a. Tangent
   b. Perpendicular
   c. Collinear
   d. Parallel

7. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 7 and 11 to produce the final sketch on the right.
   a. Equal
   b. Perpendicular
   c. Collinear
   d. Concentric

8. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 8 and 9 to produce the final sketch on the right.
   a. Equal
   b. Perpendicular
   c. Collinear
   d. None of the above

9. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 9 and 6 to produce the final sketch on the right.
   a. Equal
   b. Perpendicular
   c. Collinear
   d. None of the above

10. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 10 and 8 to produce the final sketch on the right.
    a. Concentric
    b. Parallel
    c. Collinear
    d. None of the above
11. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 11 and 10 to produce the final sketch on the right.
   a. Equal
   b. Parallel
   c. Collinear
   d. Coincident

12. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 12 and 13 to produce the final sketch on the right.
   a. Coincident
   b. Parallel
   c. Collinear
   d. Concentric

13. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 13 and 15 to produce the final sketch on the right.
   a. Equal
   b. Parallel
   c. Collinear
   d. None of the above

14. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 14 and 4 to produce the final sketch on the right.
   a. Perpendicular
   b. Parallel
   c. Collinear
   d. None of the above

15. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 15 and 11 to produce the final sketch on the right.
   a. Equal
   b. Parallel
   c. Collinear
   d. None of the above

16. In the sketch shown above, select the answer from the options that describes the constraint that will constrain lines 16 and 1 to produce the final sketch on the right.
   a. Equal
   b. Parallel
   c. Collinear
   d. Perpendicular