



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2011/2012
FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE (ENERGY ENGINEERING)

SET 501: COMPUTER AIDED DESIGN AND MANUFACTURING

DATE: Thursday 1st December 2011

TIME: 2.00p.m -4.00p.m

INSTRUCTIONS: Answer any three questions

Q1

- a) GIVE short notes to explain the meaning and use of CAD and CAM in modern production processes (4 marks)
- b) Explain rapid prototyping techniques and their use in product development (4 marks)
- c) Describe the steps required to draw fig. q1 using a CAD program (4 marks)
- d) Explain the use of mirror, copy, and trim (4 marks)

Q2

- a) Explain primitives as used in CAD giving at least 4 examples. (4 marks)
- b) Explain Boolean operations and how they can be used to modify 3D objects in CAD (4 marks)
- c) Explain the use of region, extend and scale (4 marks)
- d) Describe the steps necessary to draw and dimension the object Fig Q2. (4 marks)

Q3

- a) Explain the use of the following in CAD. (4 marks)
- b) Layers and their importance showing, how to assign, modify, hide and lock (4 marks)
- c) THREE Types of Splines used CAD and their application. (4 marks)
- d) Describe the various dimensioning techniques in CAD (4 marks)

Q4

- a) Describe the engineering design process (4 marks)
- b) What do you understand by reverse engineering (4 marks)
- c) Explain how to -extrude and revolve (4 marks)
- d) Describe the steps necessary to assemble figure q4 (4 marks)

Q5 By use of sketches or otherwise

- a) Explain sweep and loft (4 marks)
- b) Explain using sketches how solids can be modified by extrude, face taper (4 marks)
- c) Describe the various printing /plotting methods in CAD (4 marks)
- d) Describe shading and sectioning (4 marks)

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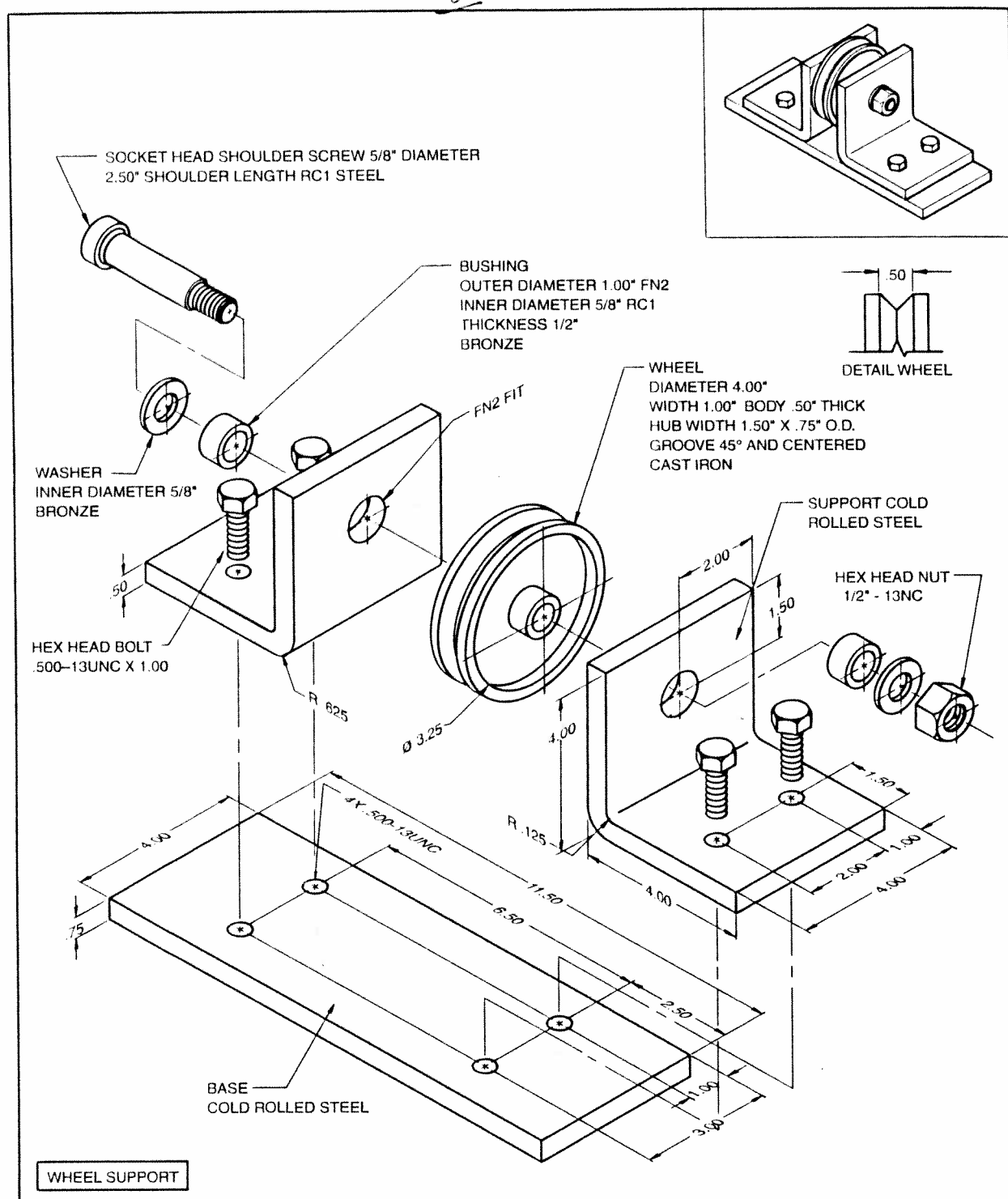


Figure 10.58

Wheel support