Homework 4: Production techniques and systems

# 1. Which one of the following is a principle of ‘lean’ manufacturing: [1]

⬨ Increasing production speed

⬨ Eliminating waste

⬨ Reducing quality

⬨ Improving staff morale

# 2. Which one of the following statements is true? [1]

⬨ Flexible Manufacturing Systems are largely manual processes

⬨ Computer Aided Manufacture is slower than using traditional machines and tools

⬨ Computer Aided Design can only produce two-dimensional designs

⬨ Computer Numerical Control is used with automated milling machines

# 3. Describe one feature of Flexible Manufacturing Systems (FMS) that make them suitable for producing short runs of a particular part? [2]

# 4. A component is shown below.

#

**A**

(a) The part needs to be drawn to a scale of 1:4.
Calculate the diameter of hole **A** on the new scale drawing. [1]

(b) The part is currently being designed in the UK using a Computer Aided Design (CAD) software package before being manufactured by an automated machine.

 (i) State **two** advantages of using CAD software to produce the drawing. [2]

 (ii) Give **one** disadvantage of using CAD to produce the design. [1]

(c) Explain **two** benefits that just-in-time (JIT) manufacturing could have for the manufacturer of the part. [4]

Total 12 Marks