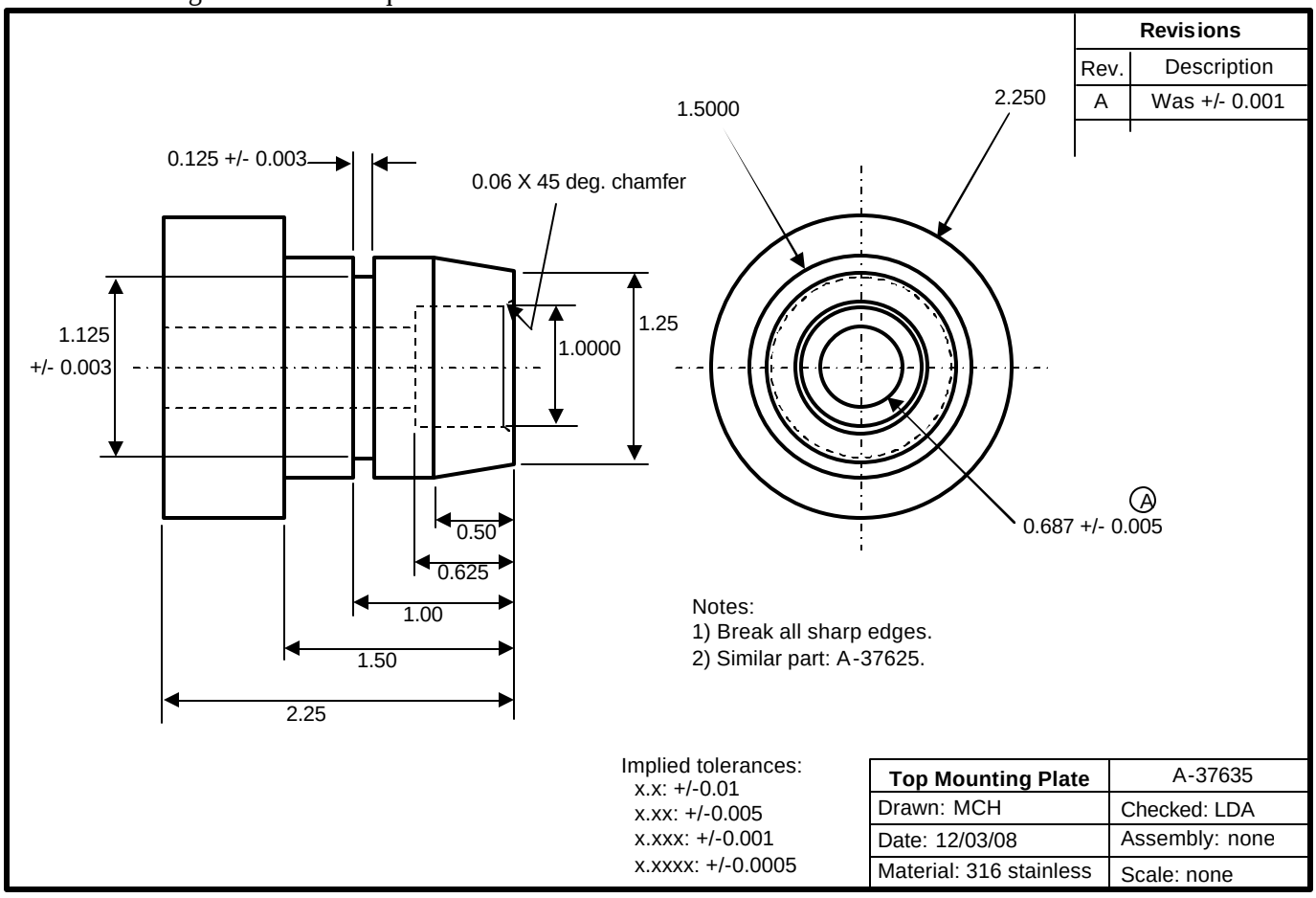
Basic Machining Practices — Exercise 1

Name: Date: Score (100 possible):

5 points each (answers begin on page 303)

Use this drawing to answer the questions below.



1) Specify the overall size of this workpiece (length and diameter).

2) What is the width of the groove in the 1.5000 diameter?

3) What is the diameter of the largest hole in this workpiece?

4) What material will this workpiece be made from?

5) Does the 0.687 hole go all the way through the workpiece (y/n)?

6) All tolerances but three are implied.

- ✍ true
- ✍ false

7) What is the tolerance for the groove's width?

8) For the groove's width, specify the mean value, high limit, and low limit.

mv: hl: ll:

9) For the 2.250 diameter, specify the mean value, high limit, and low limit.

mv: hl: ll:

10) For the largest hole's diameter (1.0000), specify the mean value, high limit, and low limit.

mv: hl: ll:

11) Unless told otherwise, you should use the mean value as your target value when making adjustments.

- ✍ true
- ✍ false

12) What is the current revision (letter) for this drawing?

13) After removing a completed workpiece from the machine, you measure the diameter of the 1.0000 hole and find it to be 0.9993.

a. Is it acceptable?_____

b. Is an adjustment necessary?_____

c. If so, how much? _____

14) After removing a completed workpiece from the machine, you measure the depth of the 1.0000 hole (0.625 dimension and find it to be 0.6248.

a. Is it acceptable?_____

b. Is an adjustment necessary?_____

c. If so, how much? _____

15) After removing a completed workpiece from the machine, you measure the 1.5000 diameter and find it to be 1.5007.

a. Is it acceptable?_____

b. Is an adjustment necessary?_____

c. If so, how much? _____

16) After removing a completed workpiece from the machine, you measure the 1.125 groove-bottom diameter and find it to be 1.129.

a. Is it acceptable?_____

b. Is an adjustment necessary?_____

c. If so, how much? _____

17) After removing a completed workpiece from the machine, you measure the 0.687 hole diameter and find it to be 0.686.

a. Is it acceptable?_____

b. Is an adjustment necessary?_____

c. If so, how much? _____

18) After removing a completed workpiece from the machine, you measure the length of the 1.5000 diameter (the 1.50 dimension) and find it to be 1.503.

a. Is it acceptable?_____

b. Is an adjustment necessary?_____

c. If so, how much? _____

19) When adjustments are necessary, adjustment polarity (plus or minus) for external surfaces (not holes) is determined by whether or not more material must be removed from the workpiece. If more material must be removed, the polarity for the adjustment will usually be negative.

- ✍ true
- ✍ false

20) When a workpiece attribute is out of tolerance, it can usually be saved if more material must be machined in order to bring the attribute within its tolerance band.

- ✍ true
- ✍ false

