For the "Written" portion of the HW, Please enter answers into a Word Document and Submit that Portion

MULTIPLE CHOICE

1) *Rule #1 requires that a part have perfect from when at _____.*
   a) *MMC*
   b) *LMC*
   c) *RFS*
   d) *Both A and B*

2) *On all geometric tolerances, _____.*
   a) *LMC is assumed to apply unless specified otherwise*
   b) *RFS is assumed to apply unless specified otherwise*
   c) *MMC is assumed to apply unless specified otherwise*
   d) *material condition modifiers must be shown*

3) *Block Tolerancing controls the tolerance on any given dimensions by _____.*
   a) *the number of significant digits*
   b) *a unique code*
   c) *placing a block with the correct tolerance next to the dimension*
   d) *the color of the dimension text*

4) *A flatness tolerance results in a boundary defined by two _____.*
   a) *concentric circles*
   b) *irregular curves*
   c) *parallel lines*
   d) *parallel planes*

5) *A form tolerance only need be applied to a surface if the needed amount of surface control is _____ the amount of size tolerance.*
   a) *more than*
   b) *equal to*
   c) *less than*
   d) *unrelated to*

6) *A cylindricity tolerance specification defines the _____ distance between two concentric cylinders that define the tolerance boundary.*
   a) *radial*
   b) *diameter*
   c) *cone*
   d) *axial*

7) *A flat datum surface is used to establish a datum _____.*
   a) *point*
   b) *line*
   c) *area*
   d) *plane*

8) *A _____ datum feature reference is always the first one shown in a feature control frame.*
   a) *letter A*
   b) *primary*
   c) *secondary*
   d) *tertiary*

9) *A feature control frame must include a minimum of _____ datum feature reference(s) for an orientation tolerance.*
   a) *one*
   b) *two*
   c) *three*
   d) *None of the above*

10) *A parallelism tolerance applied to a flat surface also controls _____.*
   a) *size*
   b) *position*
   c) *flatness*
   d) *Both A and C*

11) *Profile tolerance specifications may include _____ datum feature references*
   a) *no*
   b) *one*
   c) *two or three*
   d) *All of the above*

12) A profile tolerance with _____ datum feature references only controls form.

- *a) no*
- *b) one*
- *c) two or three*
- *d) All of the above*

TRUE/FALSE

13) It is permissible to dimension a part so that its size or location can be determined in more than one way.

- *a) True*
- *b) False*

14) Regardless of the surface variations on a part, the planes forming the datum reference frame are always mutually perpendicular

- *a) True*
- *b) False*

15) The datum references in a feature control frame must be shown in alphabetical order.

- *a) True*
- *b) False*

FILL IN THE BLANK

16) Size dimensions control the size and _____ of the dimensioned feature.

17) Two sides of a part must be perfectly parallel when the feature is at its _____.

18) If a form tolerance is applied to the same surface as an orientation tolerance, the form tolerance must be _____ than the orientation tolerance.

19) Basic dimensions locate the _____.

For the Application portion of the HW, Please model the part, create the drawing and submit EACH problem separately as its own .pdf File

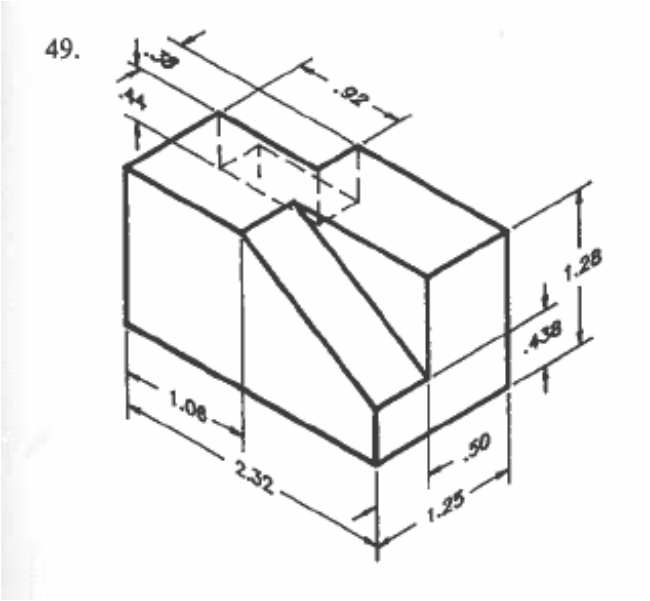
APPLICATION

49) Model the part shown below in SolidWorks and create the necessary drawing views, adding the dimensions shown to the appropriate views. Then add datums and Feature Control Frames listed below. Save the drawing as a .pdf and print it out. The only thing you will submit will be the print out of the drawing. (All dimensions are in Inches)

a) Create the datums as follows (directions according to the Isometric View below). Make the Bottom Surface Datum A. Make the Left Surface Datum B. Make the Front Surface Datum C

b) Create a Feature Control Frame which makes the Bottom Surface Flat to within 0.010".

c) Create a Feature Control Frame which makes the Top Surface parallel to the Bottom Surface to within 0.030"



52) Model the part shown below in SolidWorks and create the necessary drawing views, adding the dimensions shown to the appropriate views. Then add datums and Feature Control Frames listed below. Save the drawing as a .pdf and print it out. <u>The only thing you will submit will be the print out of the drawing.</u> **(All dimensions are in Inches).** ***<u>Don't forget your Basic Dimensions!</u>***

a) Create the datums as follows (directions according to the Isometric View below). Make the Front Surface Datum A. Make the Large Hole on the Left Datum B. Make the Large Hole on the Right Datum C

b) Create a Feature Control Frame which controls the position of the 2x .812 holes to within 0.014" relative to Datum A

c) Create a Feature Control Frame which controls the position of the 6x .201 holes to within 0.030" relative to Datums A, B and C