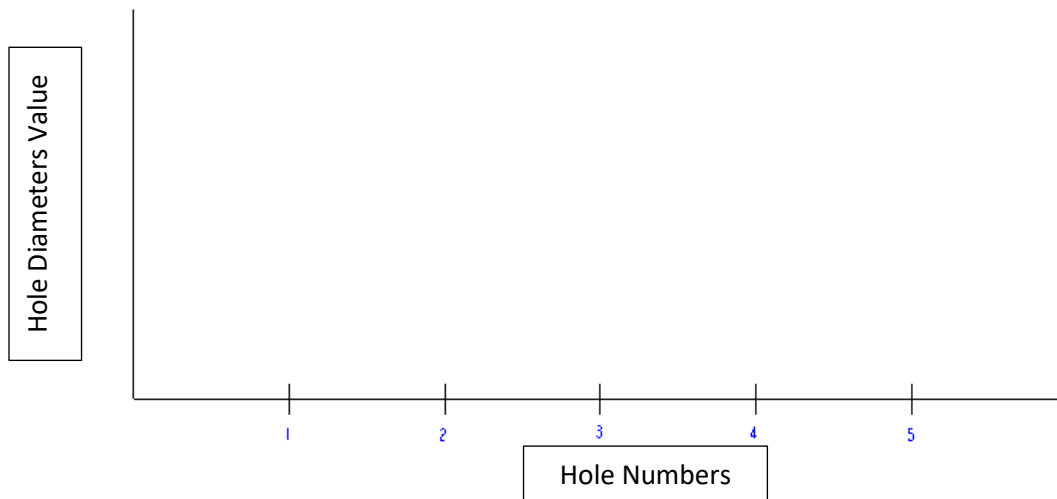


Tolerances Problems Worksheet

Name: _____

Directions: Solve the following problems. Show all Work

1. After measuring the following hole 5 times the following diameters were found. Graph the following hole diameter. Find line of best fit. Determine what the nominal value could be.
Hole 1 =.256, Hole 2 = .254, Hole 3 = .259, Hole 4 =.256, Hole 5 = .252



2. What is the total tolerance for the given dimension: $.757/.793$

3. Find the total tolerance on the following dimension: $1.134 \pm .008$

4. What is the total tolerance on the following dimension: $3 \frac{1}{4} \text{ } ^{+1/16}/_{-3/16}$
Keep answer in Fractional Form.

5. Determine the limits and tolerance on the following dimension: $3.375 \cdot +015/-007$

Upper Limit _____

Lower Limit _____

Tolerance _____

6. Find the lower limit with a of $\pm .022$ with an upper limit of 1.512.

Lower Limit _____

7. Find the limits of the following dimension: $2\frac{1}{2} \cdot +1/32/-1/16$

Upper Limit _____

Lower Limit _____

8. Find the tolerance and allowance of the following objects.

Hole diameter 1.250/1.2512

Pin diameter 1.2472/1.2485

Pin Tolerance _____

Hole Tolerance _____

Allowance _____

Type of Fit _____

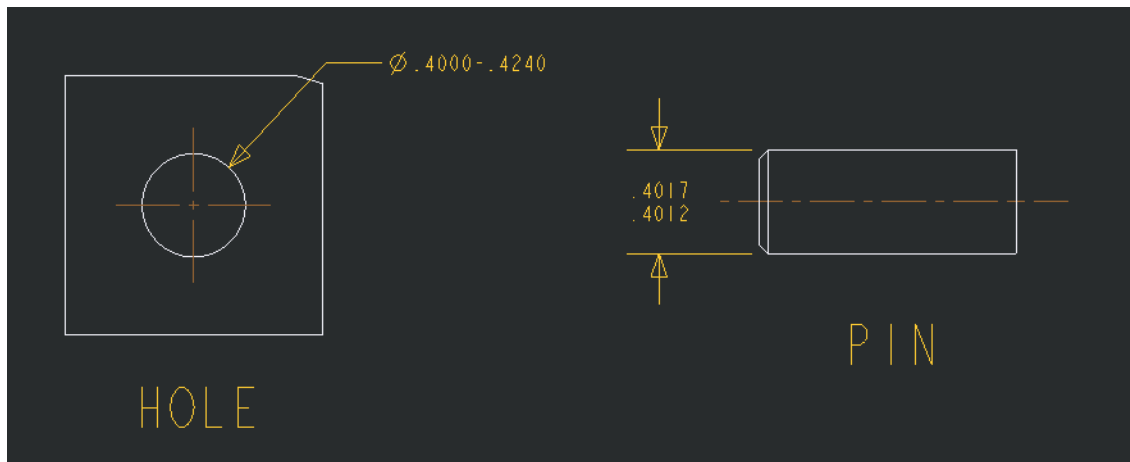
9. Find the following information for the given Hole and Pin.

Hole Tolerance _____

Pin Tolerance _____

Allowance _____

Type of Fit _____



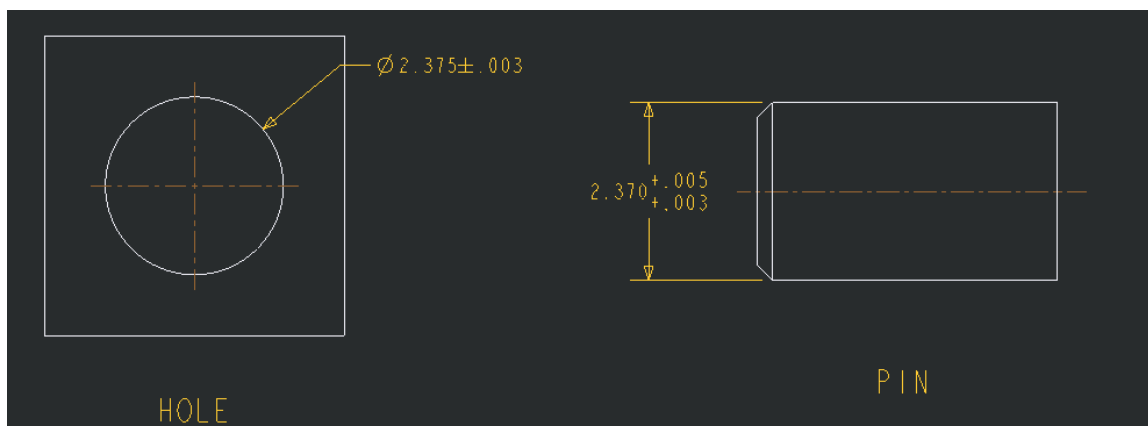
10. Find the following information for the given Hole and Pin.

Hole Tolerance _____

Pin Tolerance _____

Allowance _____

Type of Fit _____



11. Find the allowance for the following.

Pin Diameter $.535^{+.003}/_{-.002}$
Hole Diameter $.525^{+.002}/_{-.003}$

Allowance _____

Type of Fit _____

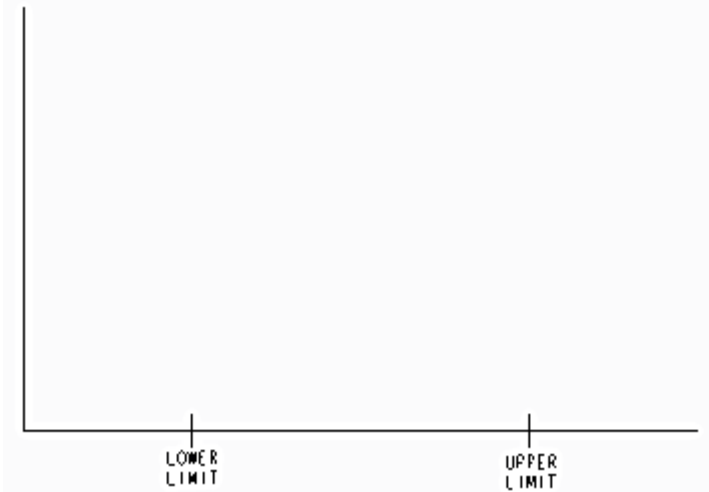
12. Find the limits for the pin if a clearance fit is to result.

The hole diameter $1.500 \pm .003$ and the allowance of $.007$.
The tolerance on the pin is $.005$.

Pin Upper Limit _____

Pin Lower Limit _____

Graph your answer and the hole. Write a short description about the assembly of the pin and hole.



13. Find the limits of a hole if an interference fit is to result.

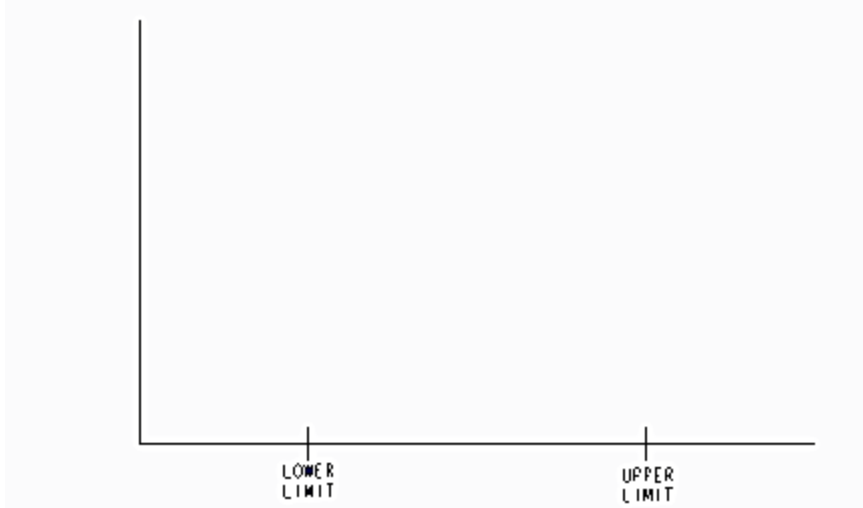
The pin diameter $1.475^{+.009}/_{-.003}$ and the allowance .027

The tolerance on the hole is .009.

Hole Upper Limit _____

Hole Lower Limit _____

Graph your answer and the hole. Write a short description about the assembly of the pin and hole.



14. Find the following:

- Tolerances on Dimensions A, B, and C.
- Find the Lower Limit of an internal diameter size for the mating piece of Dimension A with an allowance of .0027
- Find the Upper Limit of external diameter size for the mating piece of Dimension C with an allowance of .0005

Tolerance A _____

Tolerance B _____

Tolerance C _____

Internal Diameter of Mating Part with a Hole That will fit over Dimension A _____

External Diameter of an Inserted Pin that will fit in Hole C _____

