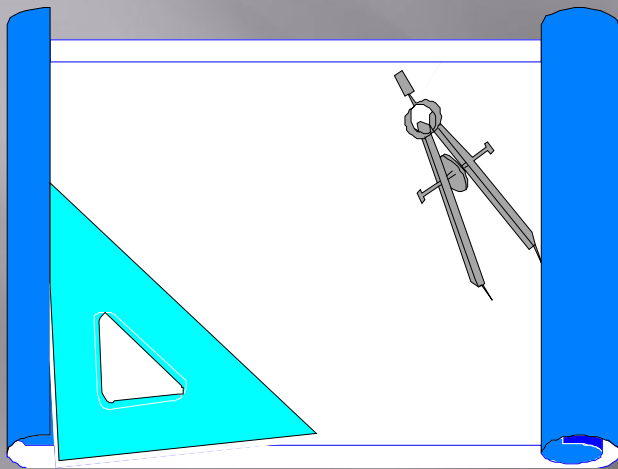


# RULES FOR DIMENSIONING

A look at proper  
dimensioning techniques.

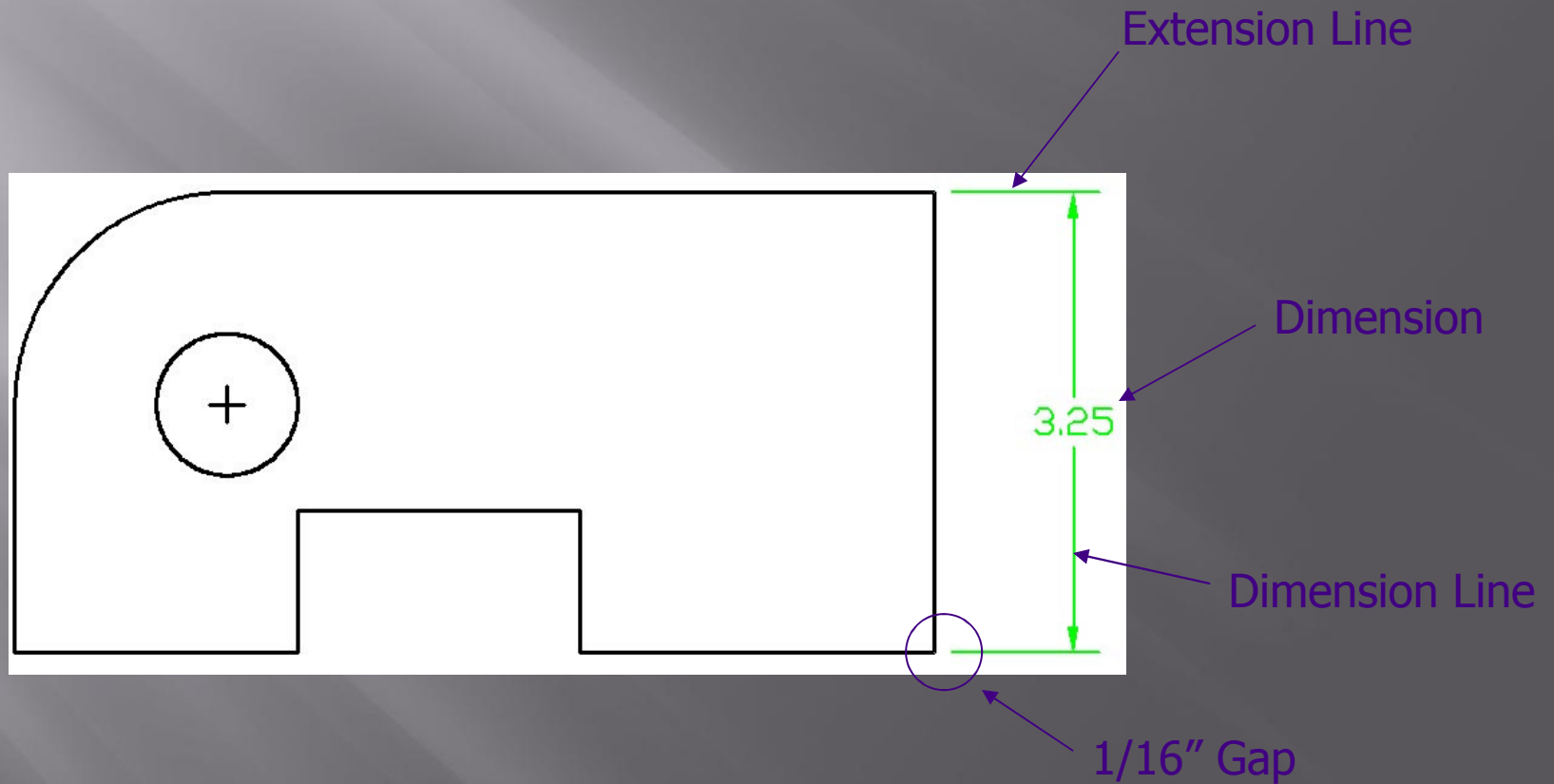
- ❑ Dimensions are used to describe the sizes and relationships between features in your drawing.
- ❑ Dimensions are used to manufacture parts and to inspect the resulting parts to determine if they are acceptable.
- ❑ Drawings with dimensions and notes often serve as construction documents and legal contracts.
- ❑ ANSI Y14.5M-1994 is the current standard. Other standards may apply.

# Standards for Your Career Field

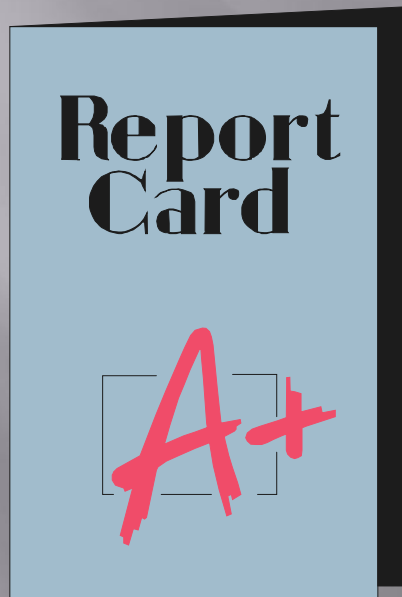


- ▣ Standards are different in different career areas.
- ▣ Most of the examples in this course will be of mechanical parts.
- ▣ Civil, Electrical, Construction, and other areas follow similar practices, but sometimes with less need for precision in measurements.
- ▣ Dimensioned drawings are a part of a contractual document.

# What Are Dimensions?



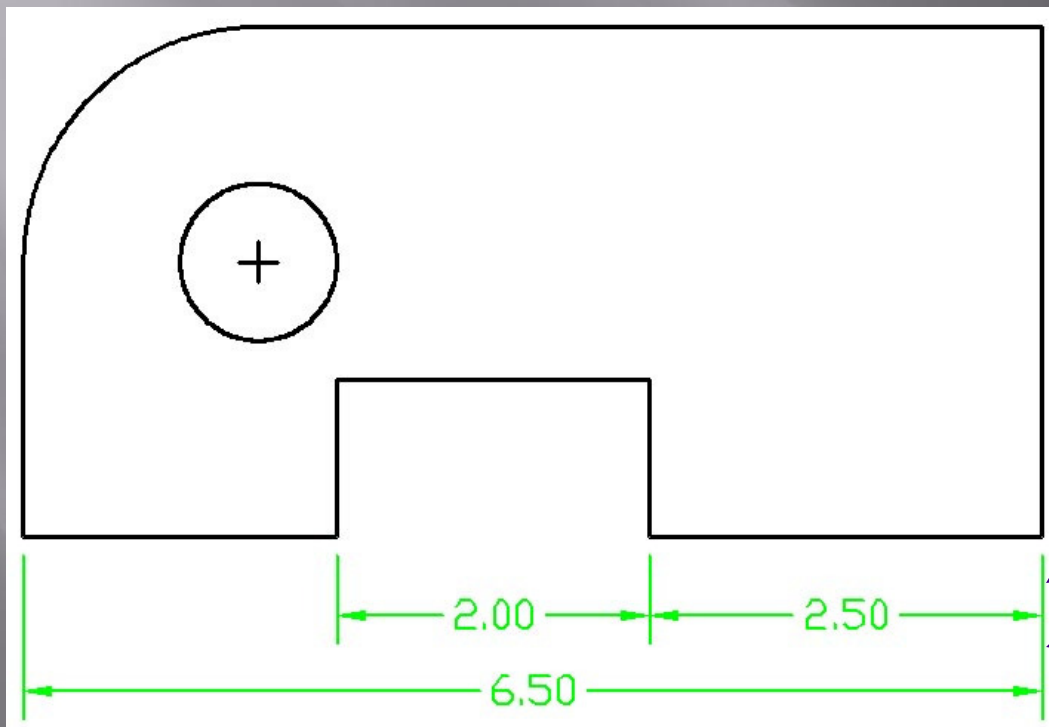
# 3 Things for Good Dimensioning



- ▣ Good technique of dimensioning
- ▣ Good choice of dimensions
- ▣ Good placement of dimensions

# Rules For Dimensioning

- 1. Dimension lines must be kept at least  $.375''$  ( $3/8''$ ) from the object, and at least  $.25''$  ( $1/4''$ ) from each other.

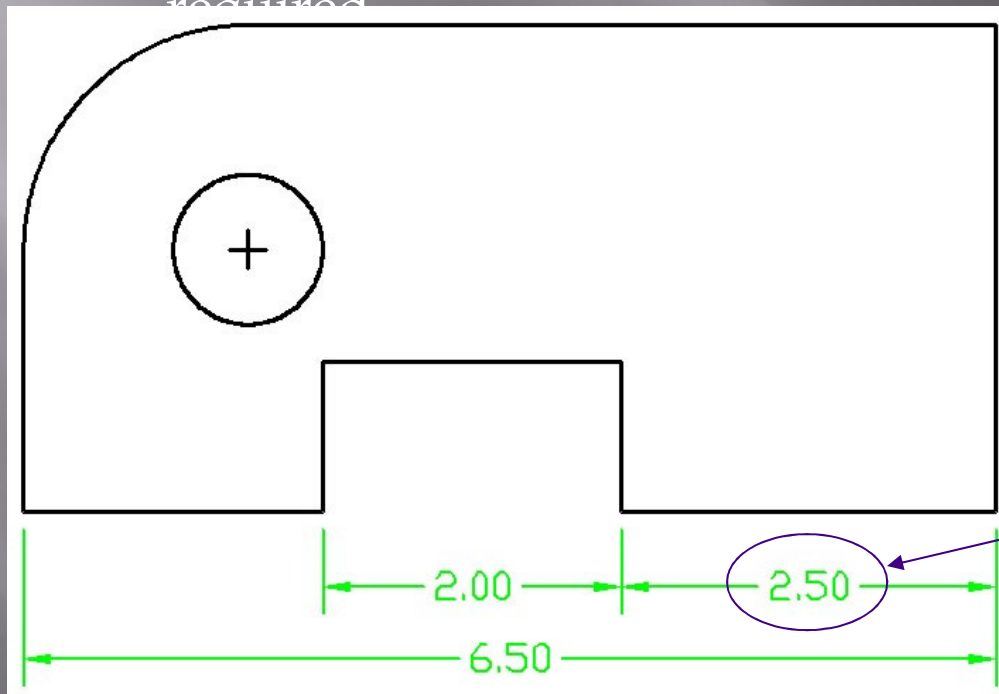


At least  $.375''$  ( $3/8''$ )

At least  $.25''$  ( $1/4''$ )

# Rules For Dimensioning

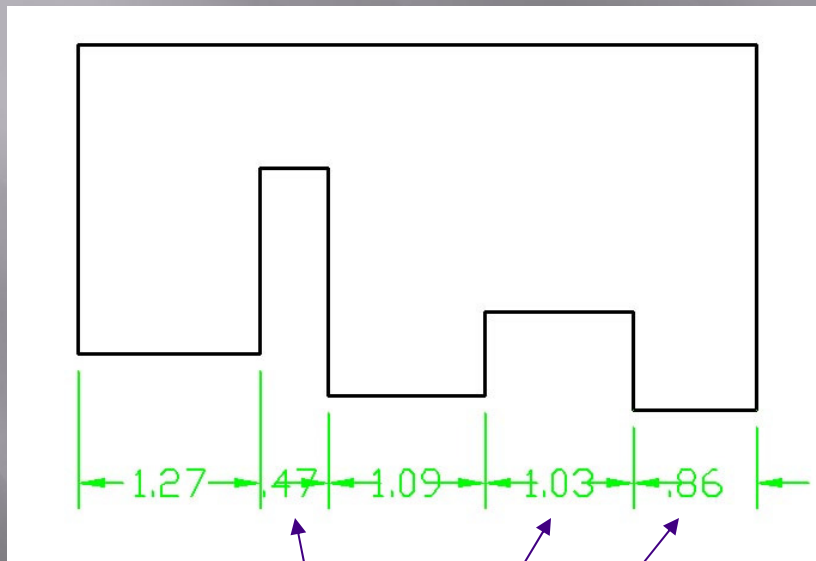
- 2. On machine drawings, dimensions should be kept in decimal inches or millimeters. Values are given to the second decimal place, except when greater accuracy is required.



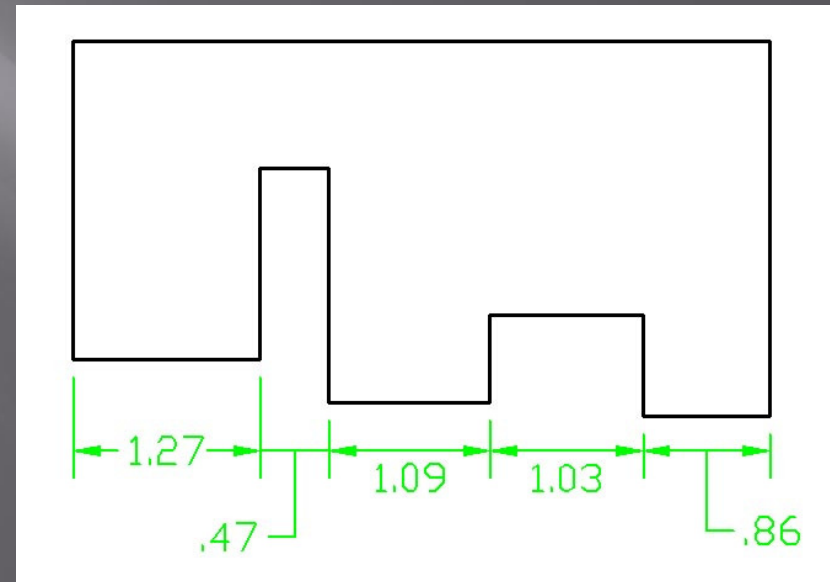
Decimal inches given to the second decimal place.

# Rules For Dimensioning

- 3. Dimensions should be positioned clearly.



Not Positioned Clearly

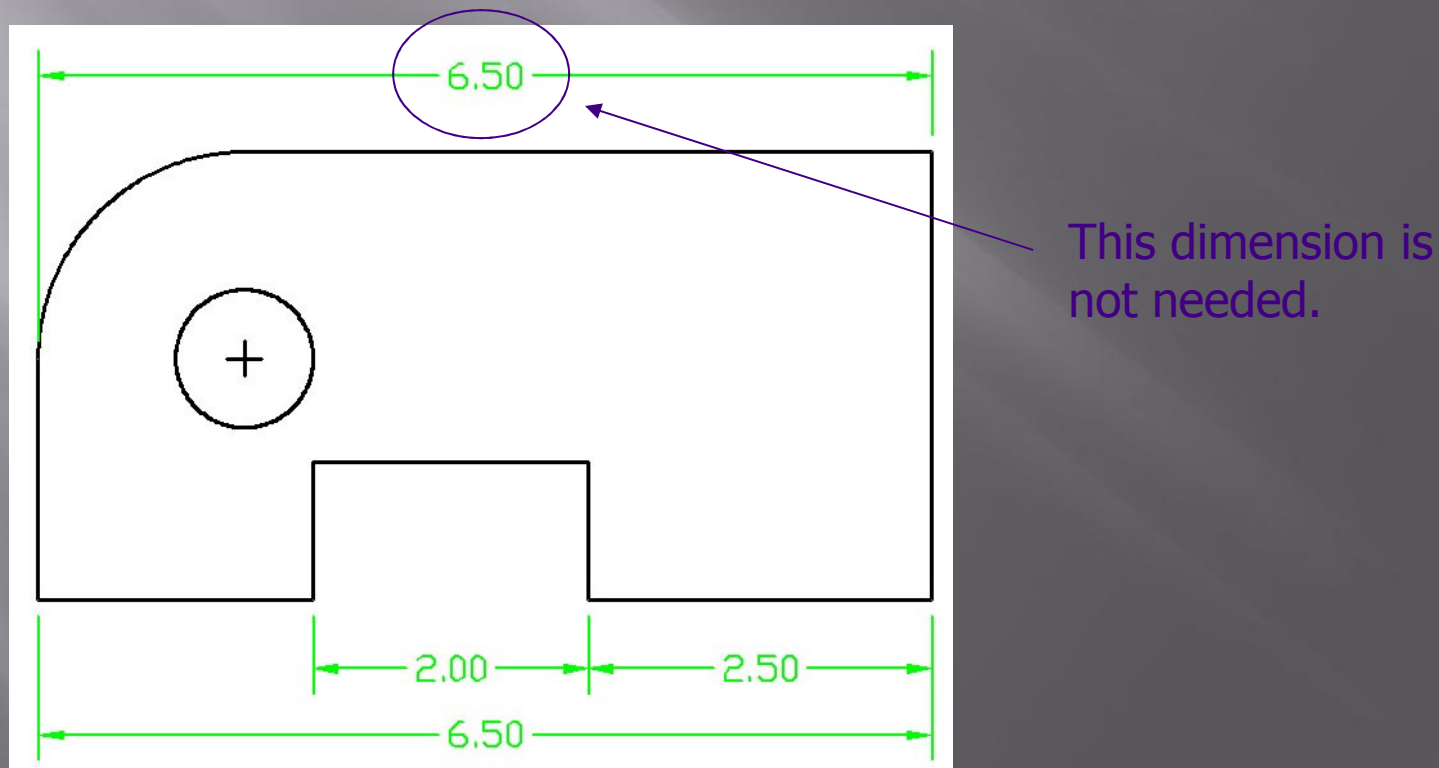


Positioned Clearly



# Rules For Dimensioning

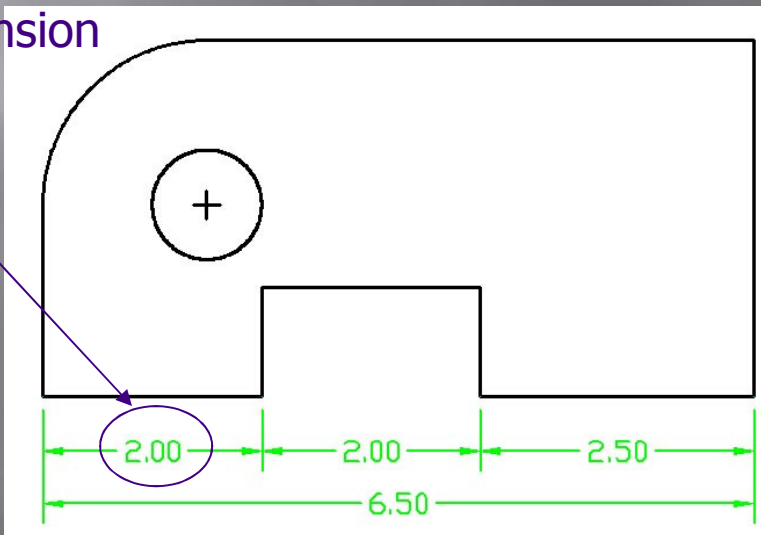
- ▣ 4. Dimensions that are not needed should not be given.



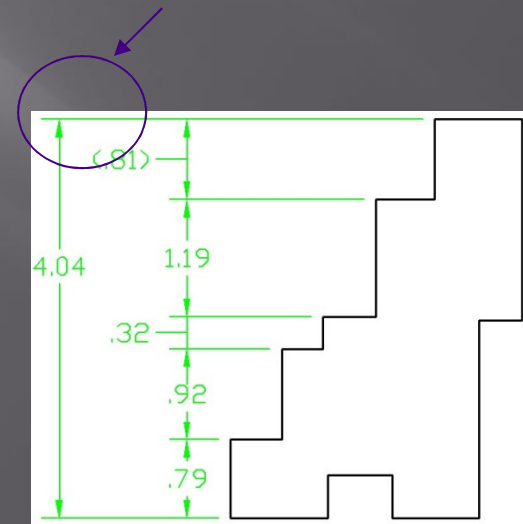
# Rules For Dimensioning

- 5. Overall dimensioning should be placed outside of the smaller dimensions. When the overall is given, one of the smaller ones should be eliminated, unless it is needed for reference. In that case the dimension should be in parentheses.

This dimension should be eliminated

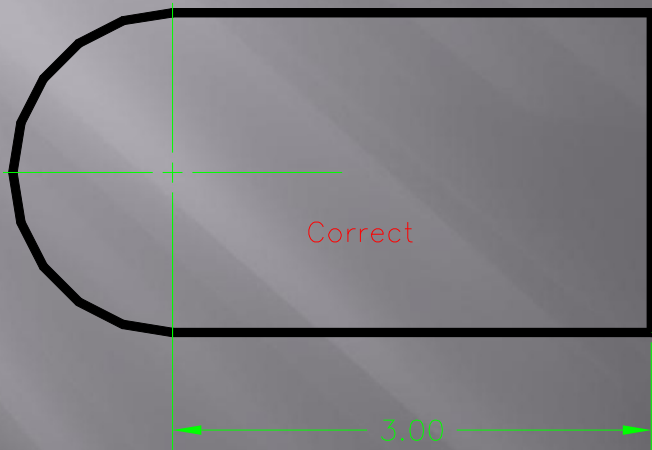


This dimension is needed.



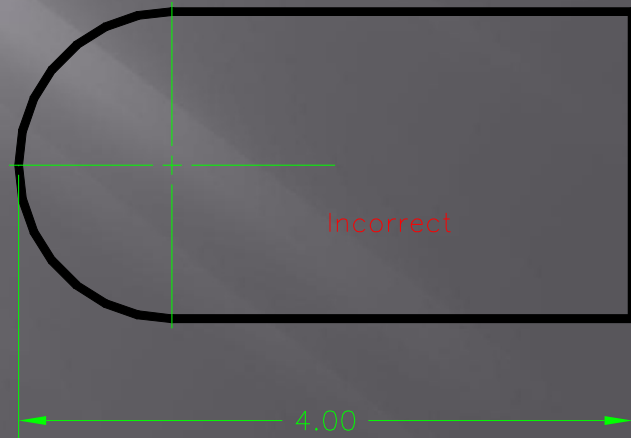
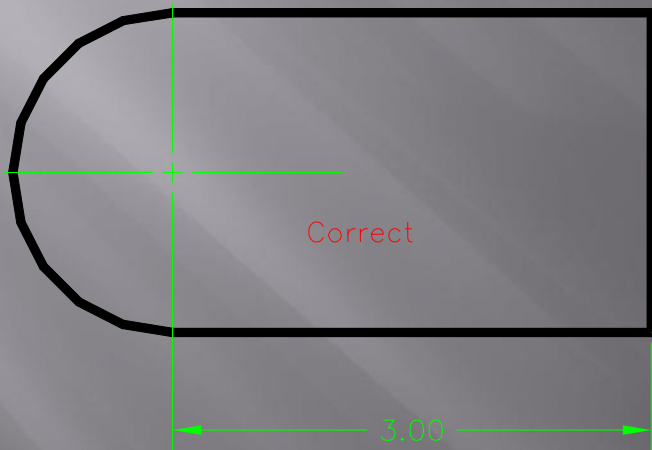
# Rules For Dimensioning

- ▣ 6. On a part with a circular end, dimension to the centerline.



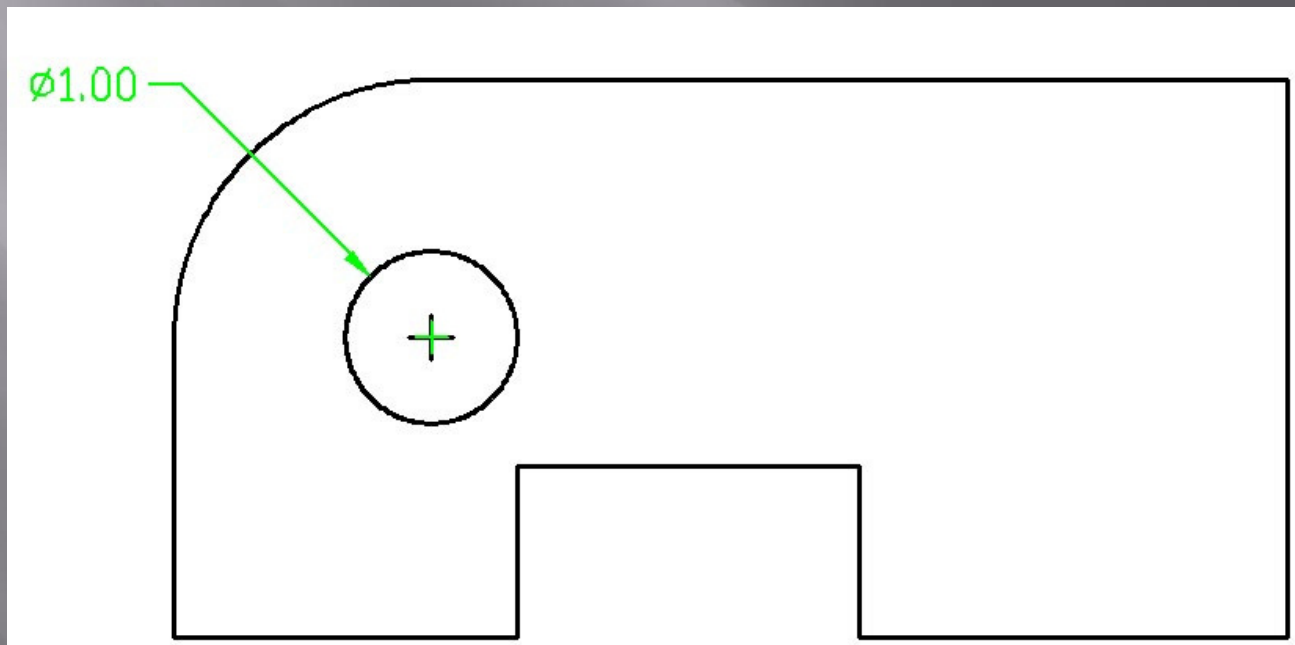
# Rules For Dimensioning

- 6. On a part with a circular end, dimension to the centerline.



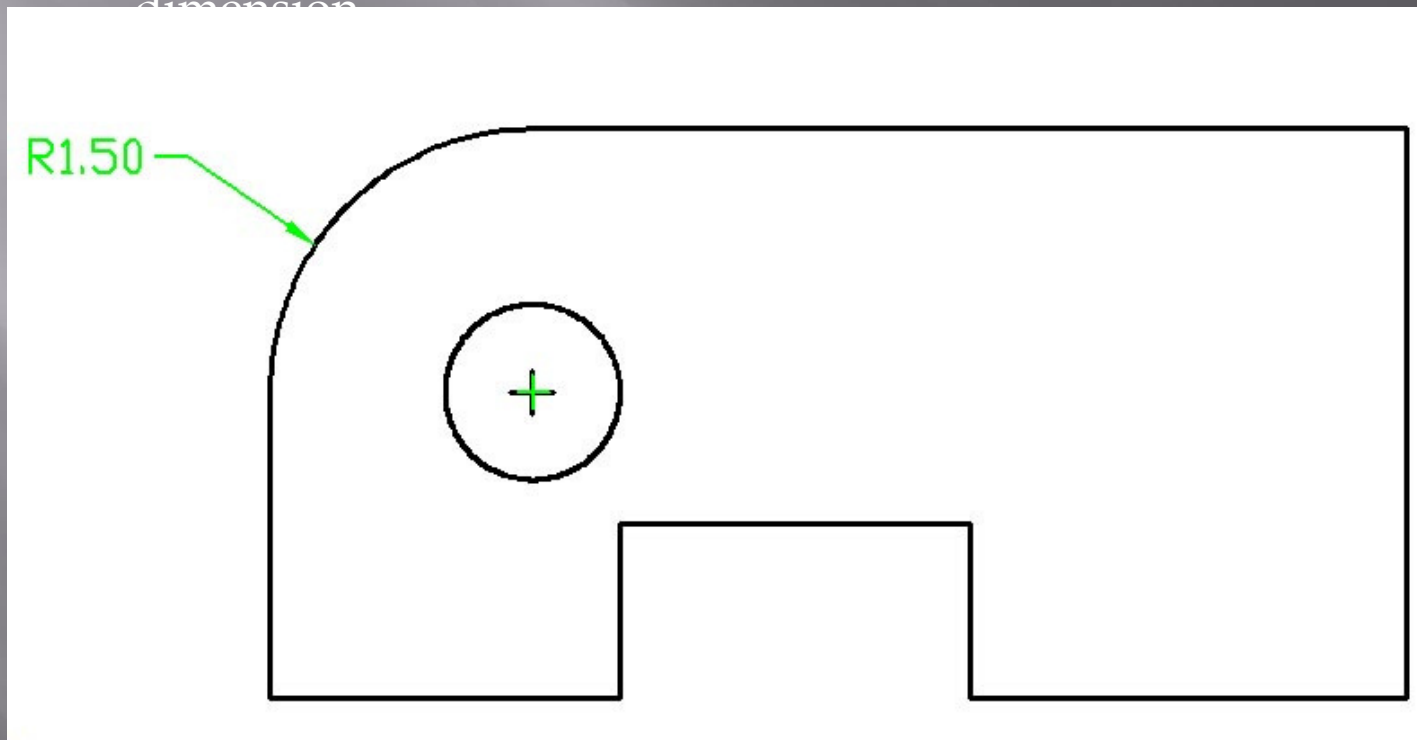
# Rules For Dimensioning

- 7. All circles must be dimensioned; this is done by giving the diameter of a circle, not the radius. Use the diameter symbol.



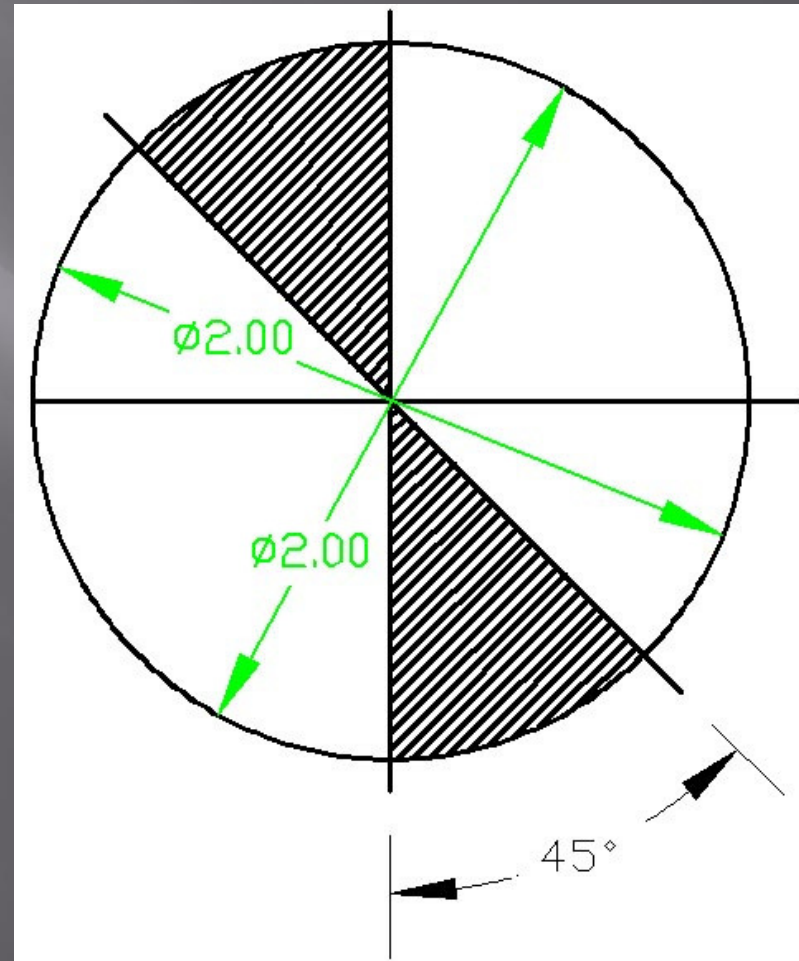
# Rules For Dimensioning

- 8. All arcs must be dimensioned; this is done by giving the radius of the arc, with the abbreviation R given before the dimension



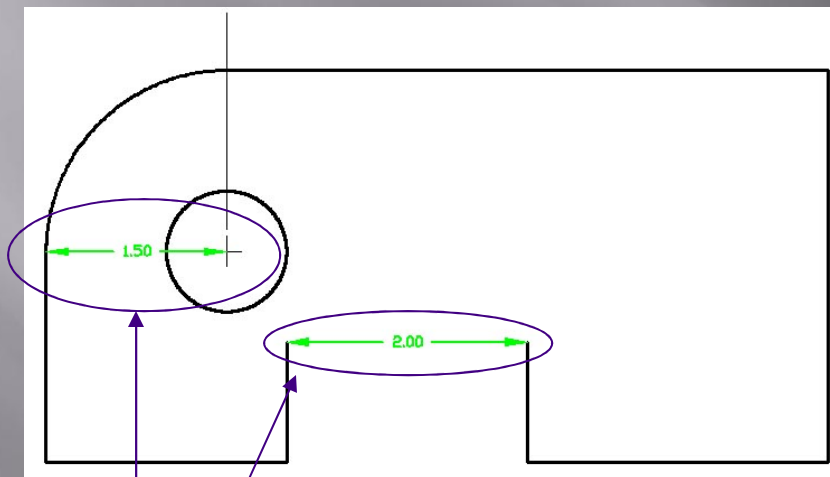
# Rules For Dimensioning

- ▣ 9. Don't place dimensions in the shaded/hatched area (Shown at right).



# Rules For Dimensioning

- ▣ 10. Do not use a centerline or a part of an object as a dimension line.



Incorrect



# Rules For Dimensioning

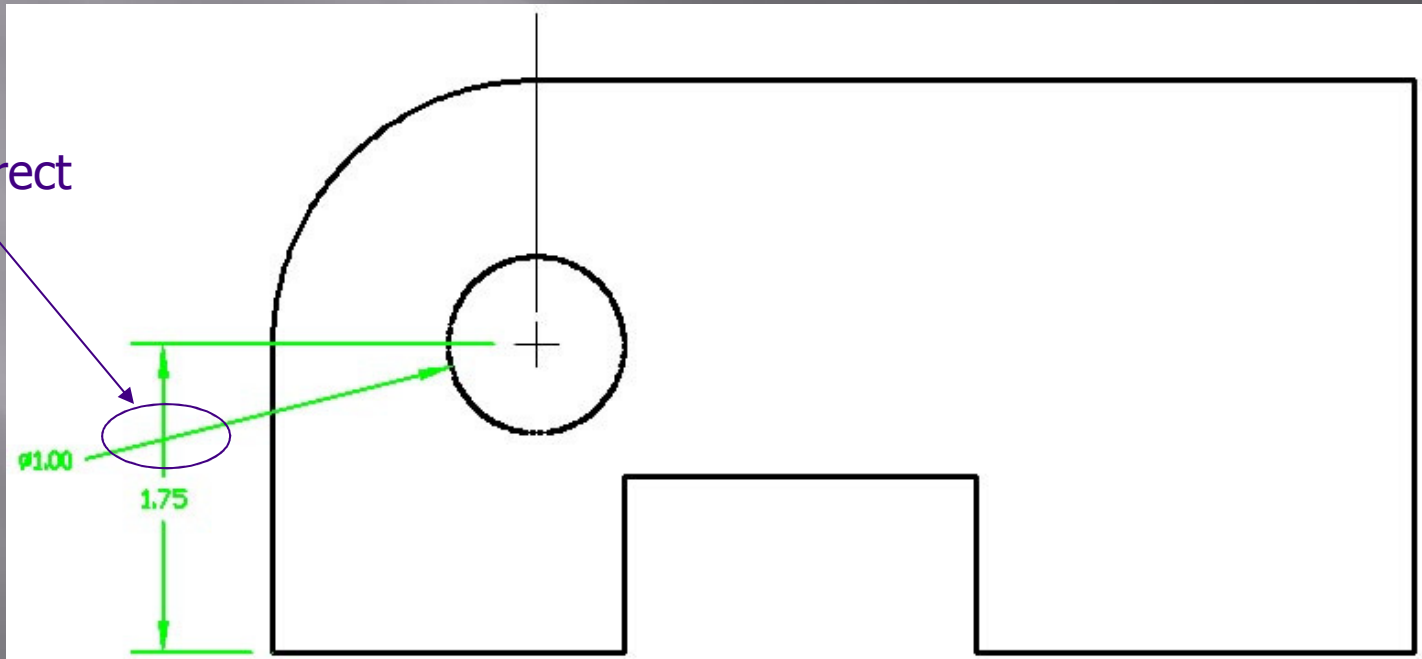
- 11. In general, dimensions should be placed outside the view outlines.



# Rules For Dimensioning

- 12. Do not cross dimension lines.

Incorrect

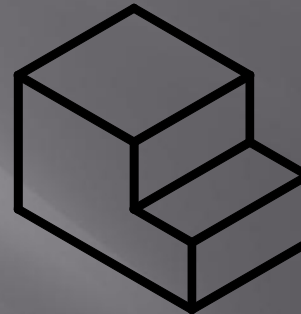


# Rules For Dimensioning

Additional Rules for 3-View  
Drawings

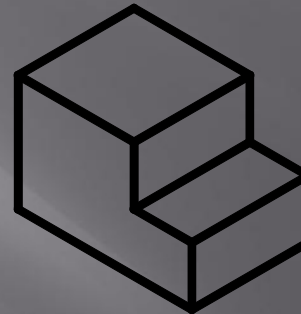
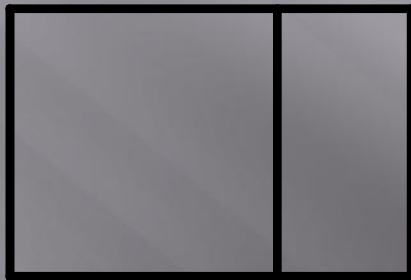
# Rules For Dimensioning

- 13. The view that shows the shape of the object most clearly is to be dimensioned.

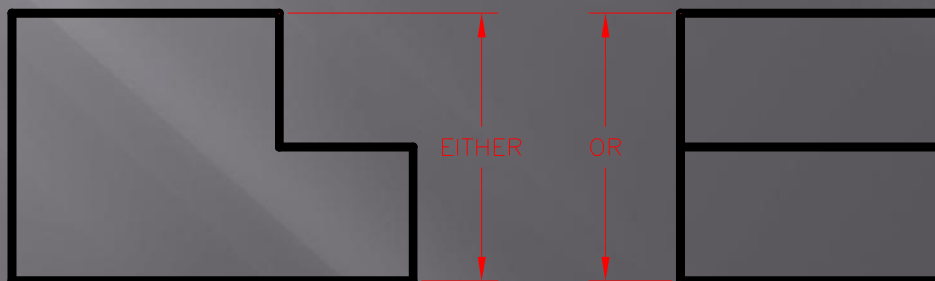


# Rules For Dimensioning

- 14. The same dimension is not repeated on different views.

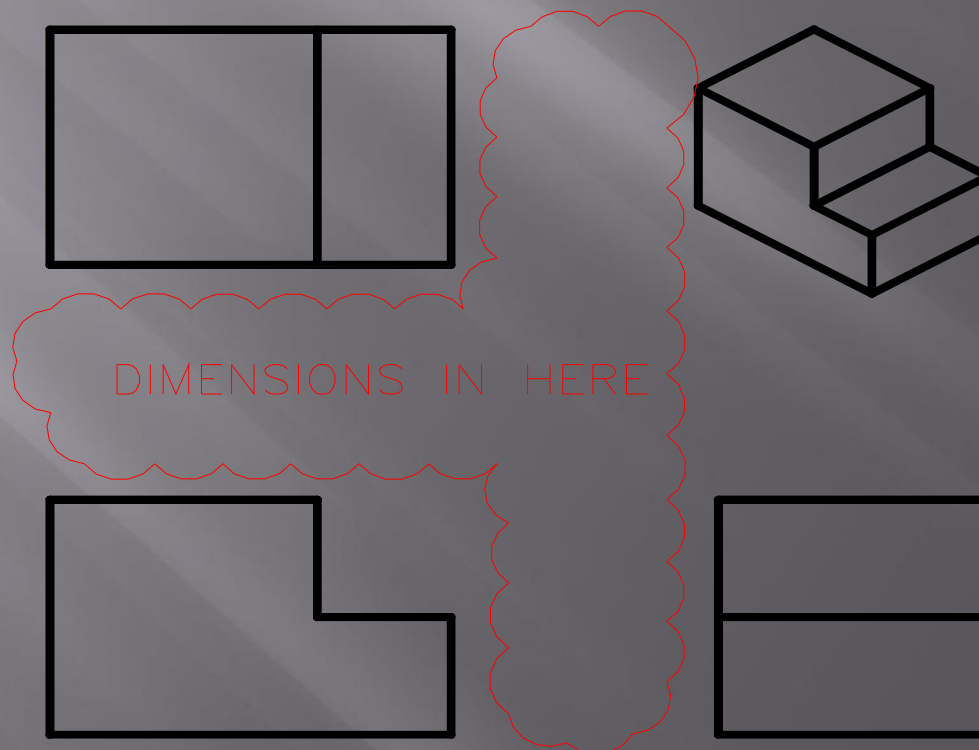


PICK ONE LOCATION, NOT BOTH



# Rules For Dimensioning

- 15. In general, dimensions are placed between views. Dimensions should only be placed on the object or outside of the views if it will improve the clarity of the dimensions.



# Rules For Dimensioning

- 16. Avoid dimensioning to hidden views.

