## GEAR ARM

## Project

Draft the Gear Arm by hand. The drawing should be done at 1:1 scale, in mm. Dimension the drawing as shown and properly fill in the title block. Be sure to draw everything on the correct layers. Also don't forget to place your dimensions the correct distance away from the object.


Before You Begin
There are some basic concepts you need to know before you start drawing. All traditional drawing and CAD drawing techniques are based on the construction of basic geometric elements. A point, line, arc, and circle are the basic elements used to create the most complex drawings. You must understand the basic geometric construction techniques in order to draw on paper or in CAD.

## Some Key Terms

A point, represents a location in space or on a drawing that has no width, height, or depth. A point is represented by the intersection of two lines, a short crossbar on a line or a small cross. Never represent a point by a simple dot on the paper.


A line, can have an indefinite or definite length. A straight line is the shortest distance between two points and is commonly refereed to simply as a "line".



A circle, is a closed curve, all points of which are the same distance from a point called the center.


## Introduction to Descriptive Geometry

Descriptive Geometry is a mathematical-graphical procedure to draw the exact representation of geometrical relations in drawings. You will learn more concepts later, but for this project you need to understand the "Drawing an Arc Tangent to Two Arcs" concept.


2. OFFSET A DISTANCE "R" FROM ARC A. THEN B. NOTE WHERE THESE TWO OFFSETS INTERSECT.

4. TRIM THE CIRCLE AT THE POINTS THEY HID TANGENT TO CIRCLES A \& B.

TANGENT TO THE TWO ARCS

3. DRAW A CIRCLE WITH THE RADIUS "R" FROM THE INTERSECTION POINT.


Practice drawing an arc tangent to the two arcs by hand with a compass in the three examples below.






Review Questions

1. What are the four basic elements used to create the most complex drawings?
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2. What is a point on a drawing?
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3. Why do you think you never represent a point by a simple dot on the paper?
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4. A line can have a $\qquad$ and $\qquad$ length.
5. In the box below, graphically show how an Arc is part of a Circle.
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Additional Problems
$11^{\text {th }}$ edition Technical Drawing By: Giesecke
Fig 4.57, pg 131 Fig 4.77, pg 131
