

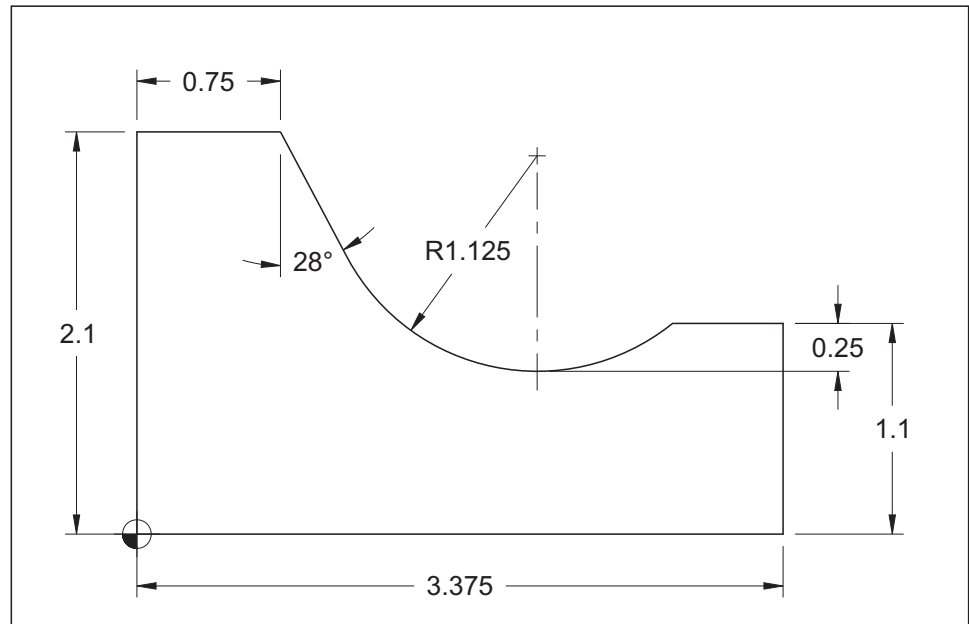
## Trig Calculations

As in any trigonometric calculation, finding the triangle to solve is often the greatest challenge, particularly for complex contours. The solution to the given problems has four parts:

### Part 1

The drawing shown on the right is the same drawing as provided in the project. It is only included here for easier reference.

Study the drawing



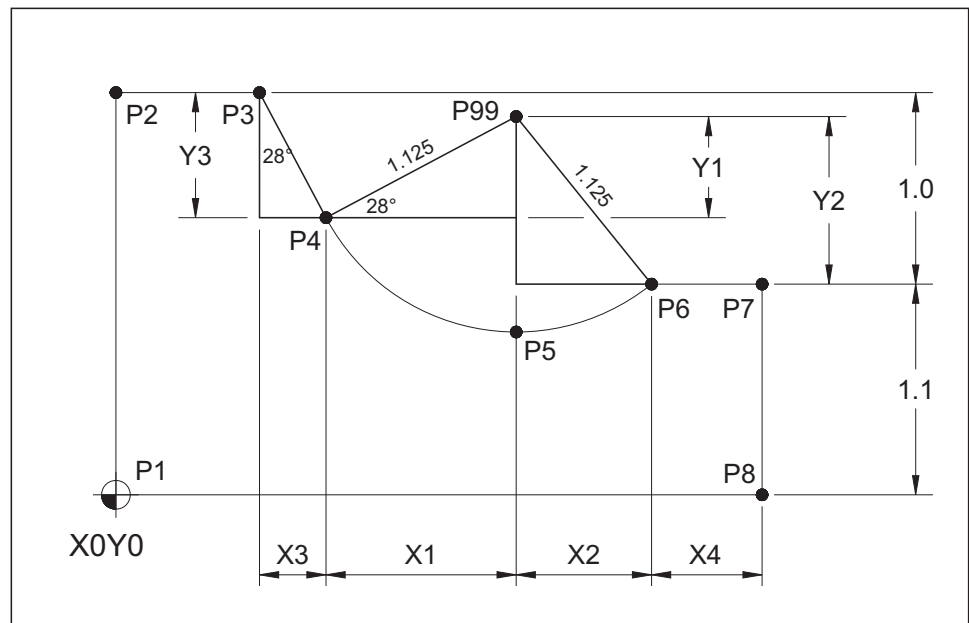
### Part 2

For the best organization, first identify all points by a point number (P1, P2, ...).

Evaluate all dimensions and decide what calculations are necessary and in which order.

For clarity, use X and Y numbered pairs, for example, X1 with Y1, X6 with Y6, etc..

Do the calculations



### Part 3

Write down the formulas and their results. Use the multiple memory storage of your calculator (if available) to store temporary results, or write them down and use them with at least five decimal place accuracy, to prevent accumulative errors.

Double check results by using a different mathematical solution, if possible

$$X1 = 1.125 \times \cos 28 = 0.993316$$

$$Y1 = 1.125 \times \sin 28 = 0.5281555$$

$$Y2 = 1.125 - 0.25 = 0.875$$

$$X2 = \sqrt{1.125^2 - Y2^2} = 0.7071068$$

$$Y3 = 1.0 - Y2 + Y1 = 0.6531555$$

$$X3 = Y3 \times \tan 28 = 0.3472889$$

$$X4 = 3.375 - 0.75 - X3 - X1 - X2 = 0.5772883$$

### Part 4

Use the *Coordinate Sheet* found under the *Forms* menu, and fill it with the calculated coordinates, in the order of program use.

Write the program

PT	X-COORDINATE	Y-COORDINATE
P1	X0.0000	Y0.0000
P2	X0.0000	Y2.1000
P3	X0.7500	Y2.1000
P4	X1.0973	Y1.4468
P5	X2.0906	Y0.8500
P6	X2.7977	Y1.1000
P7	X3.3750	Y1.1000
P8	X3.3750	Y0.0000
P99	X2.0906	Y1.9750