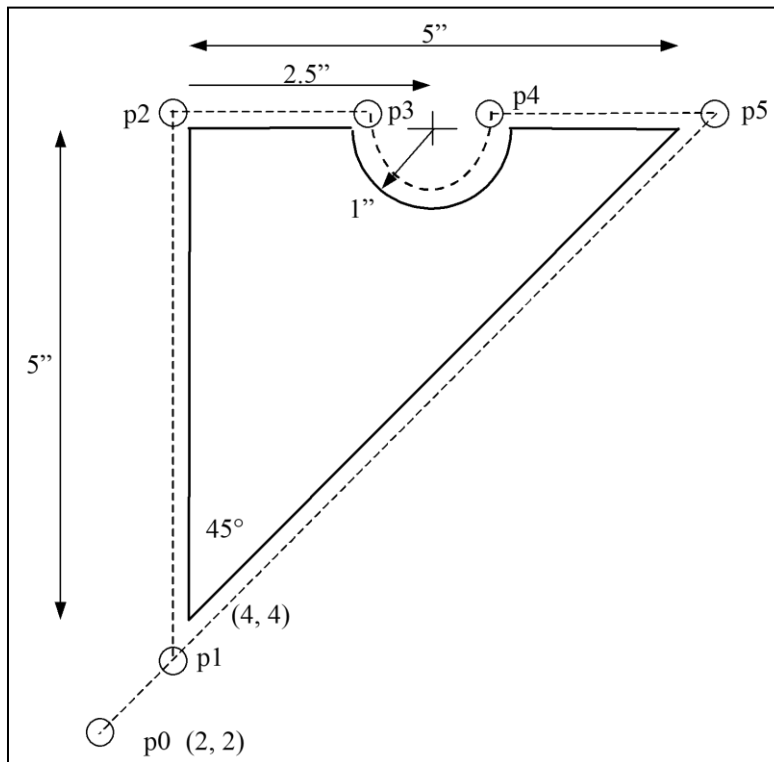**Manual Part Programming Example**

DS001-K   **program word address**

Tool size = 0.25 inch,
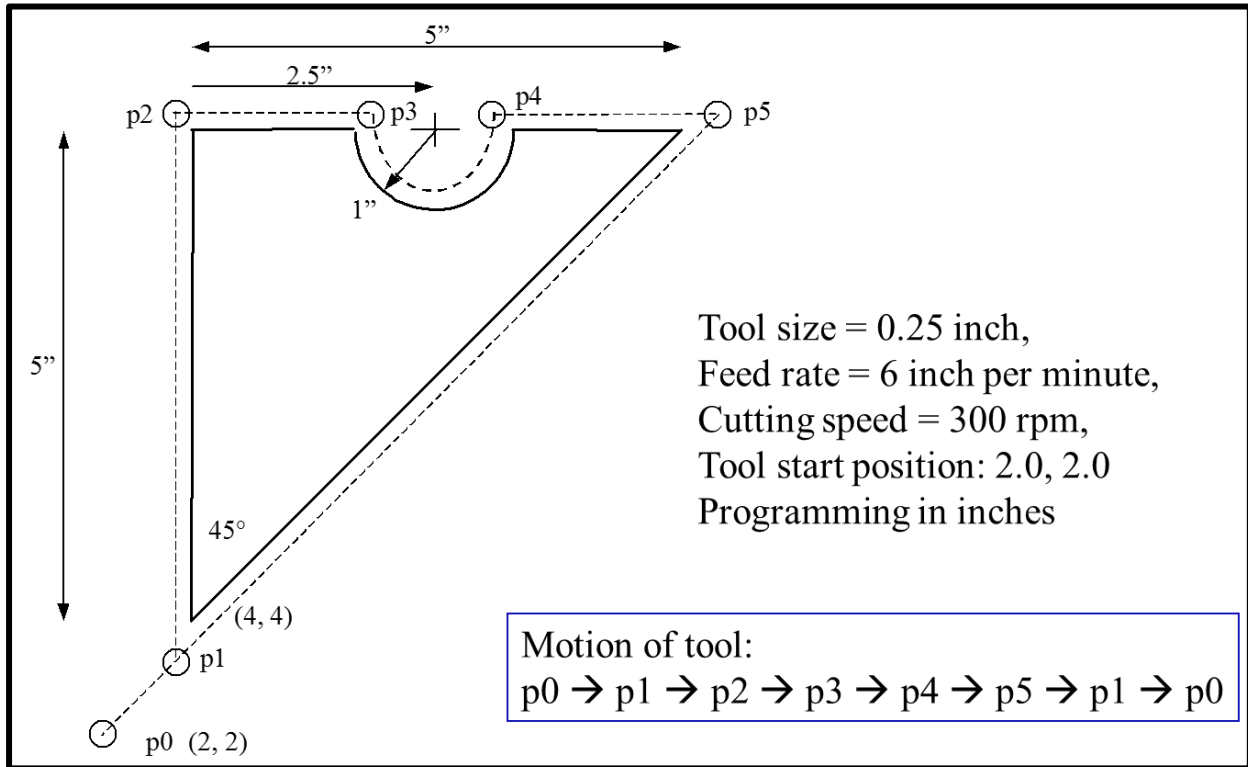
Feed rate = 6 inch per minute,

Cutting speed = 300 rpm,

Tool start position: 2.0, 2.0

Programming in inches

Motion of tool:

p0 → p1 → p2 → p3 → p4 → p5 → p1 → p0

Tool size = 0.25 inch,
Feed rate = 6 inch per minute,
Cutting speed = 300 rpm,
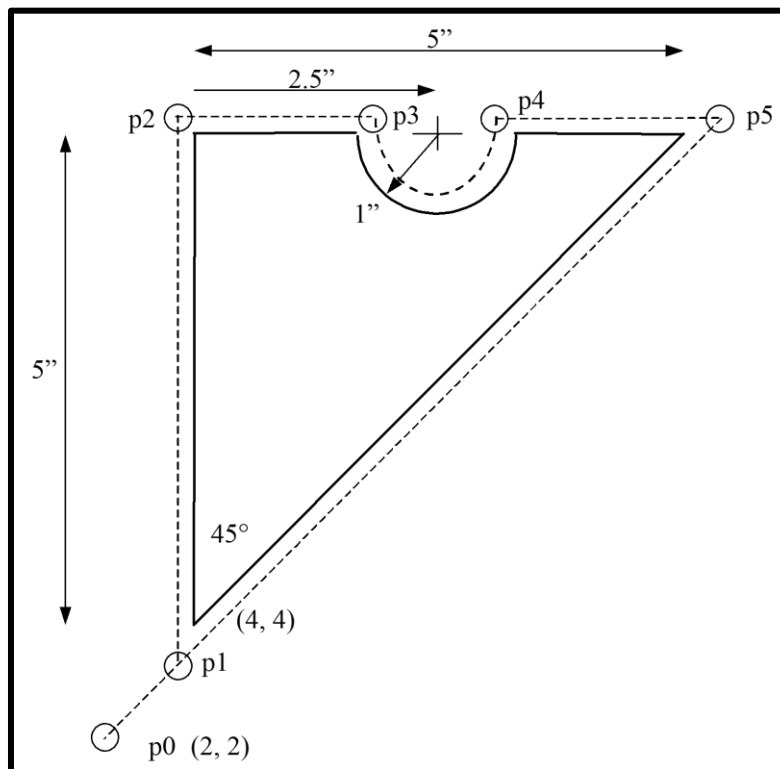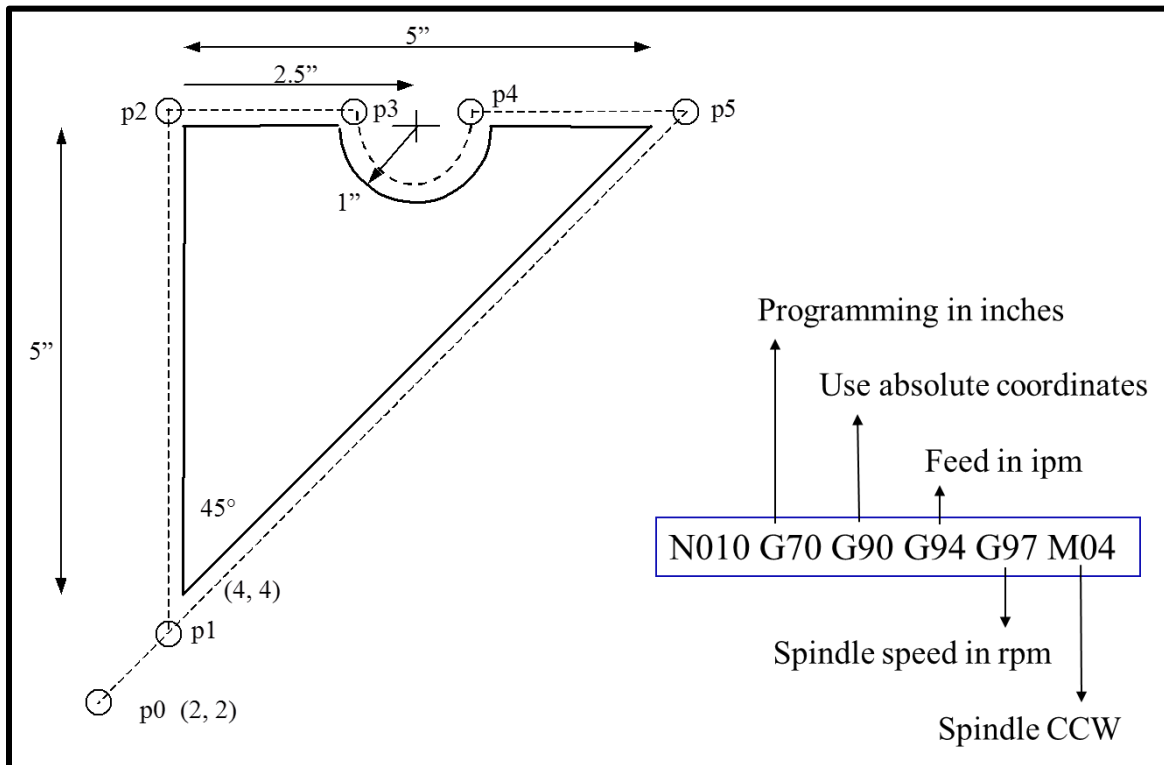Tool start position: 2.0, 2.0
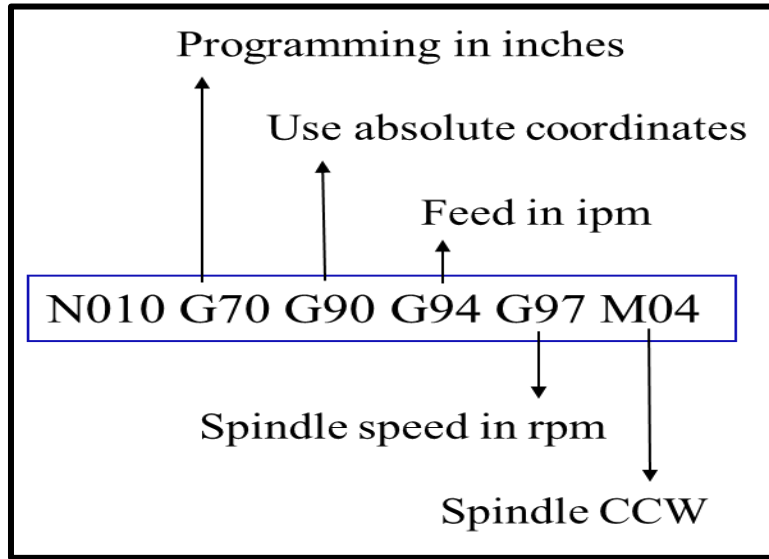Programming in inches

Motion of tool:
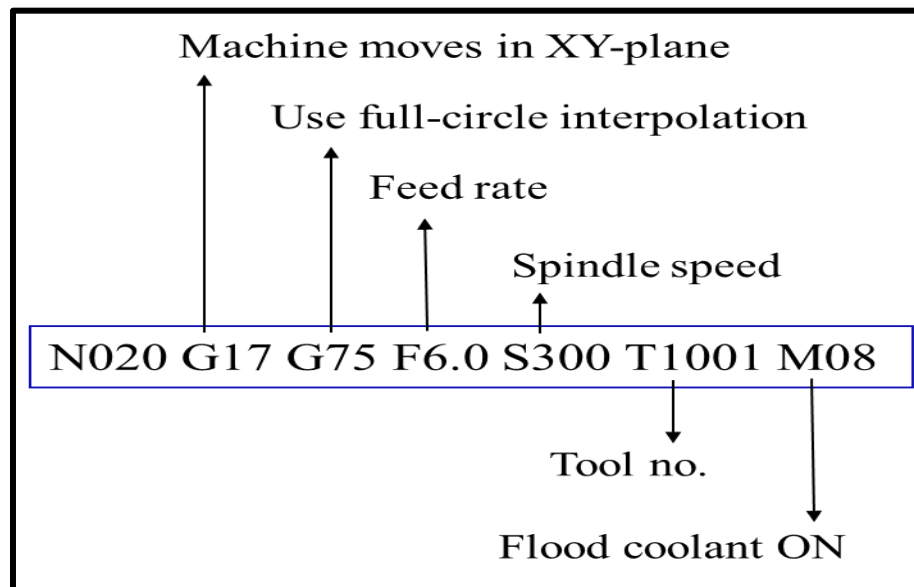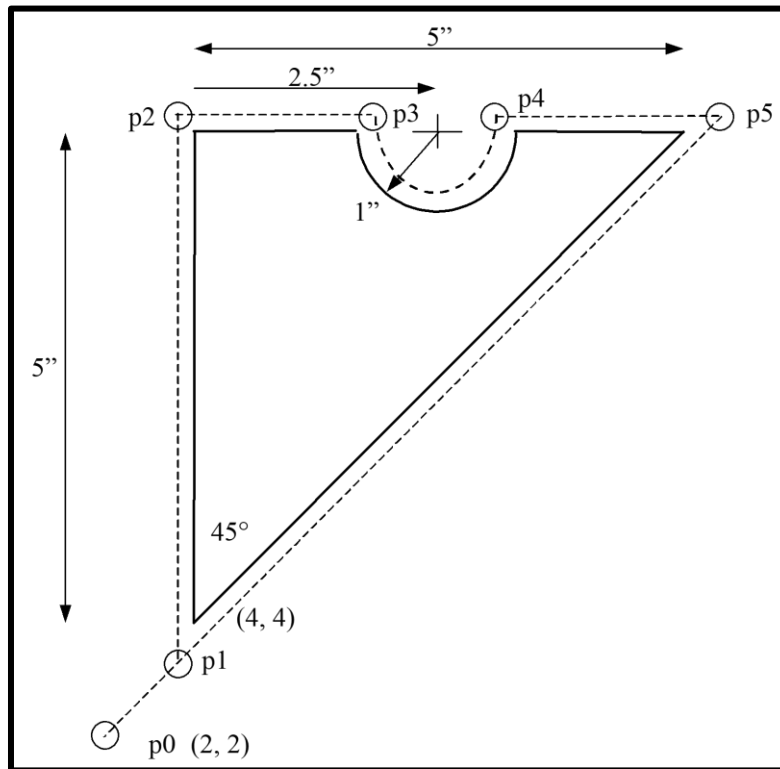p0 → p1 → p2 → p3 → p4 → p5 → p1 → p0

1. Set up the programming parameters

Programming in inches

Use absolute coordinates

Feed in ipm

N010 G70 G90 G94 G97 M04

Spindle speed in rpm

Spindle CCW

5"

2.5"

p2   p3   p4   p5

1"

5"

45°

(4, 4)

p1

p0 (2, 2)

Programming in inches

Use absolute coordinates

Feed in ipm

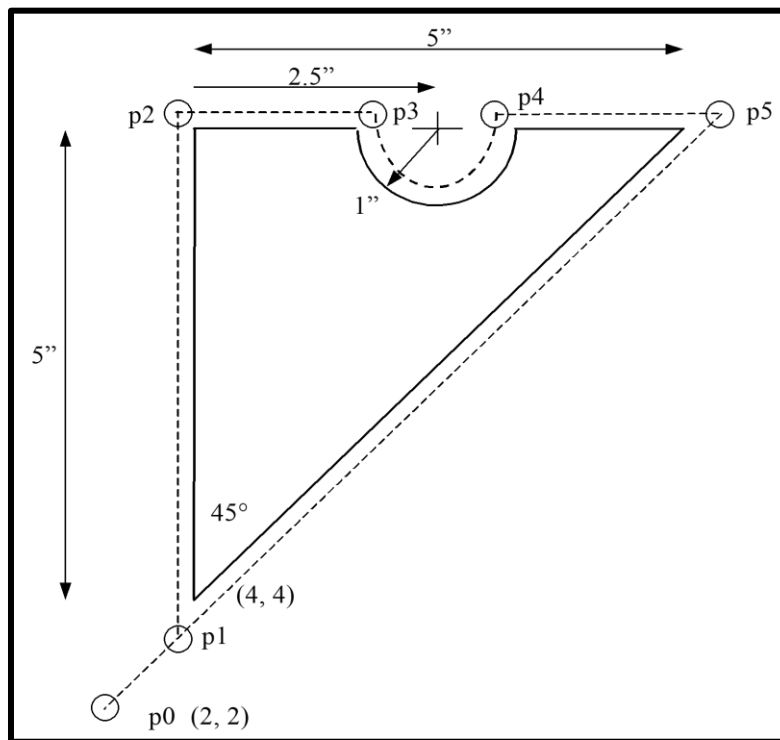N010 G70 G90 G94 G97 M04

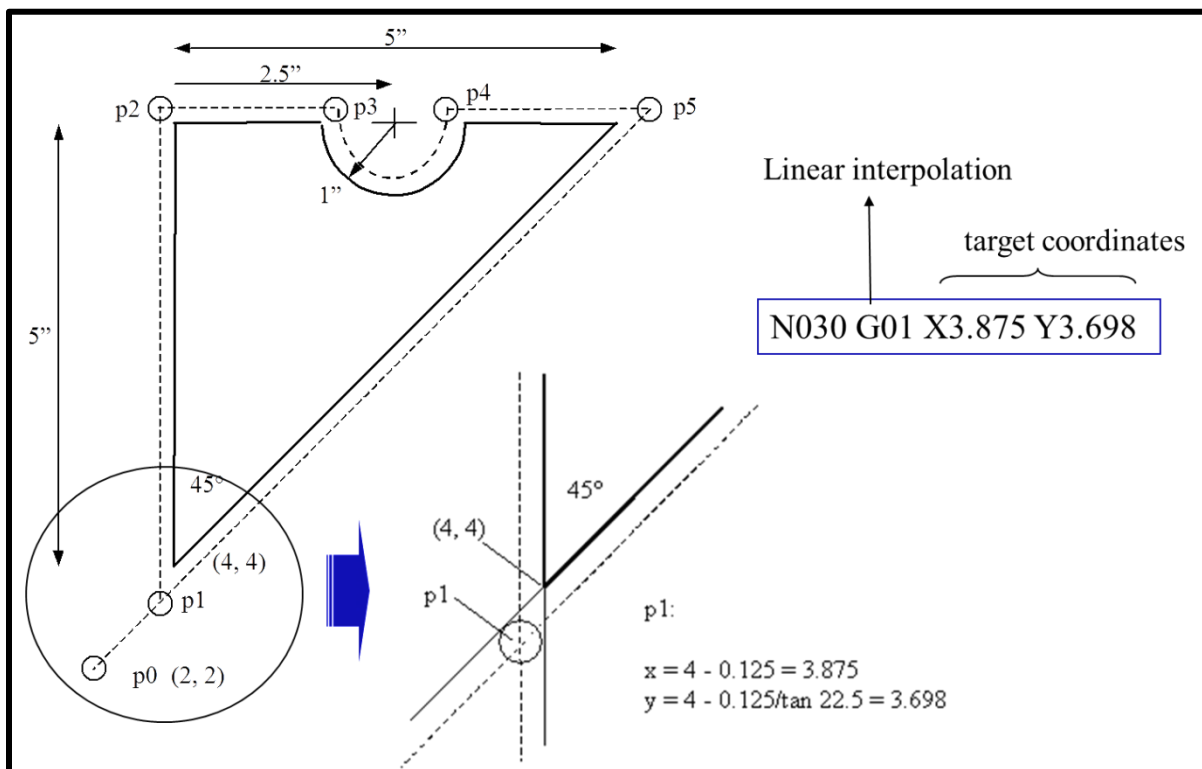Spindle speed in rpm
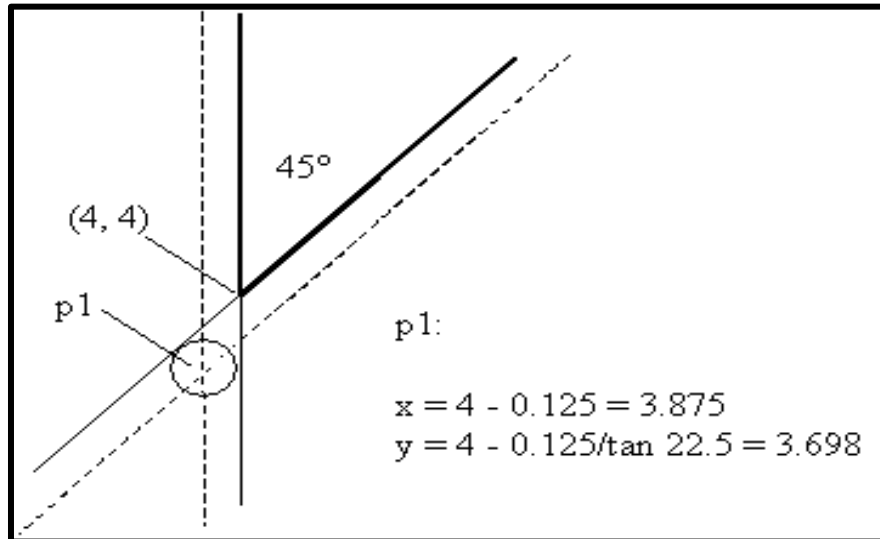
Spindle CCW

2. Set up the machining conditions
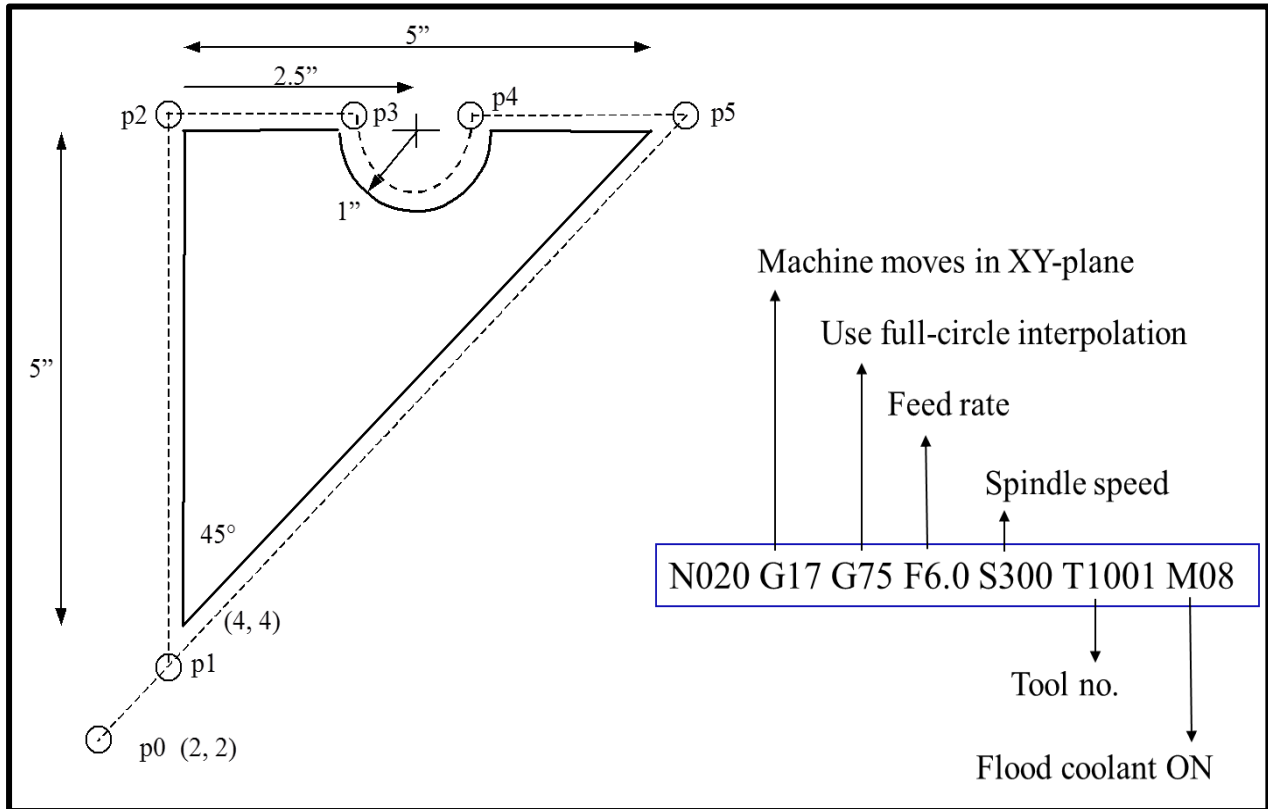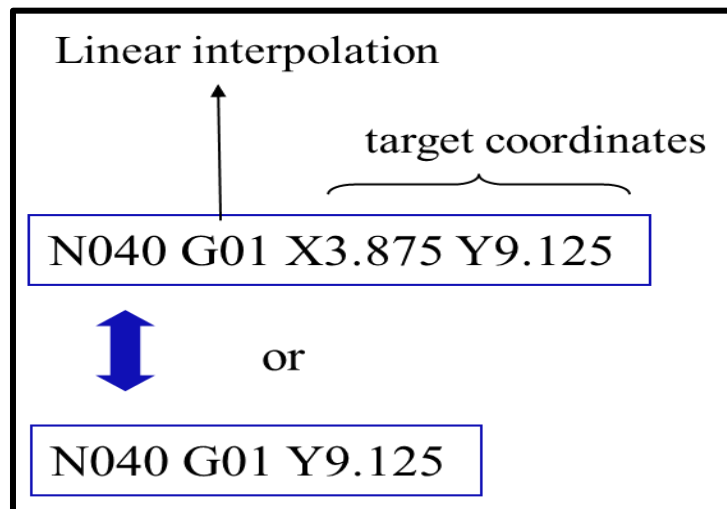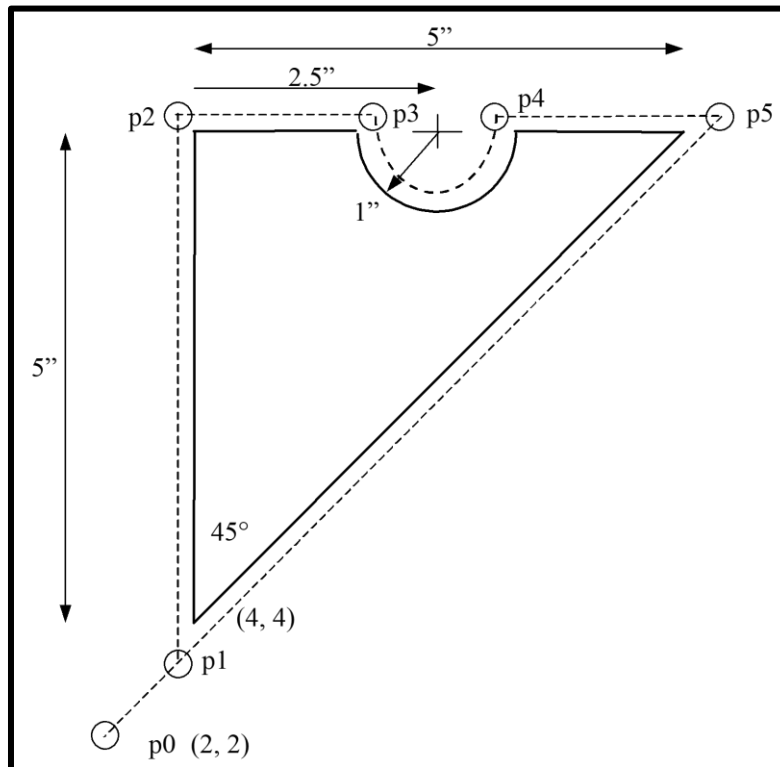
3. Move tool from p0 to p1 in straight line

Linear interpolation

target coordinates

N030 G01 X3.875 Y3.698

45°

(4, 4)

p1

p1:

$x = 4 - 0.125 = 3.875$
$y = 4 - 0.125/\tan 22.5 = 3.698$

5"

2.5"

p2   p3   p4   p5

1"

Linear interpolation

target coordinates

N030 G01 X3.875 Y3.698

5"

45°   45°

(4, 4)   (4, 4)

p1   p1

p0 (2, 2)

p1:

$x = 4 - 0.125 = 3.875$
$y = 4 - 0.125/\tan 22.5 = 3.698$
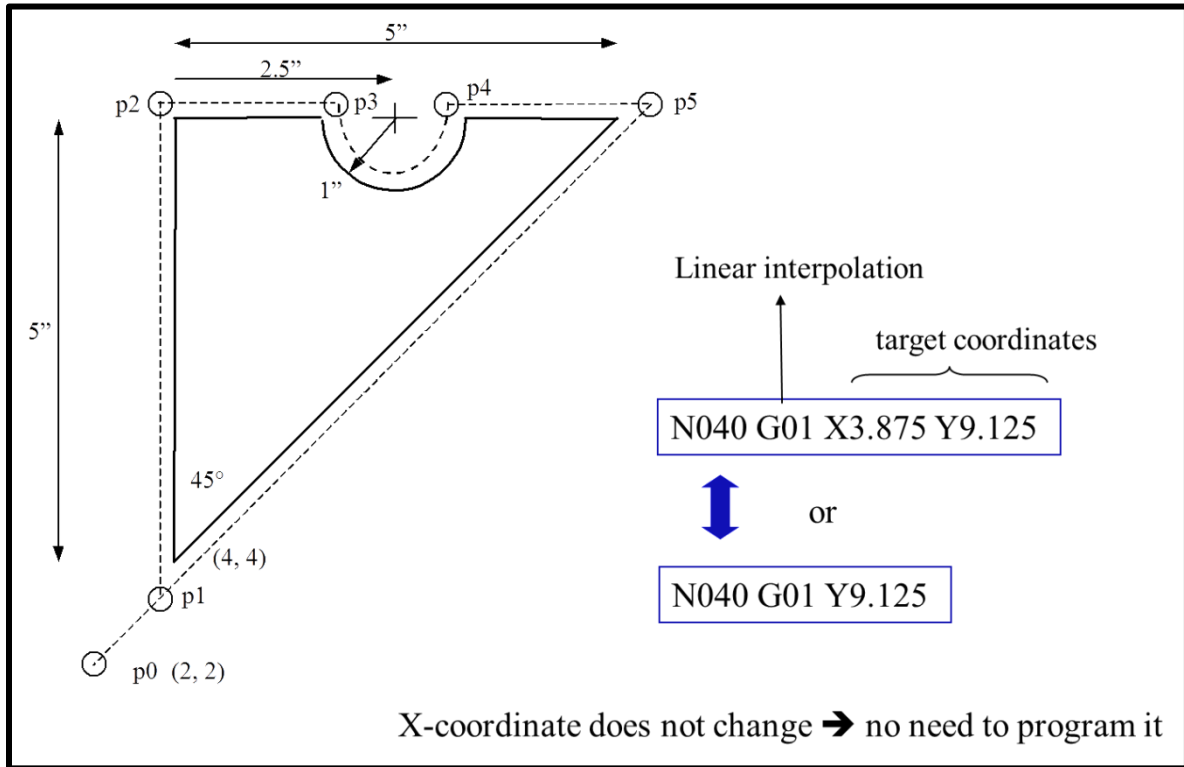
4. Cut profile from p1 to p2

X-coordinate does not change ➔ no need to program it

5. Cut profile from p2 to p3

$y = 9 + 0.125 = 9.125$
$(6.5 - x)^2 + 0.125^2 = (1 - 0.125)^2$
$x = 5.634$