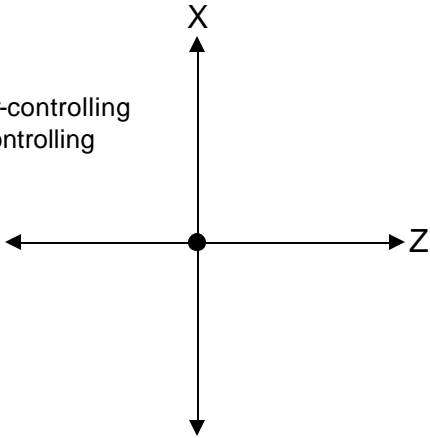


# Coordinate system for a CNC lathe

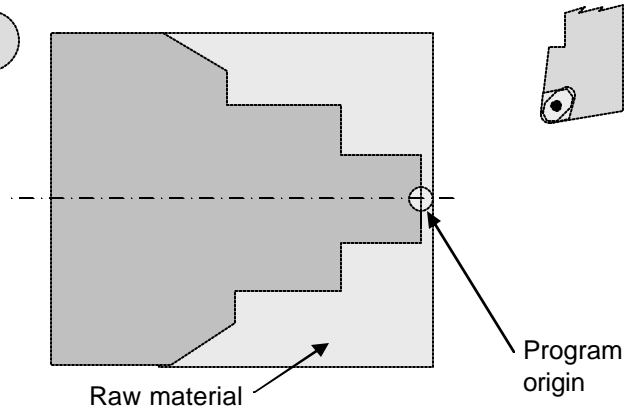
1

X: diameter-controlling  
Z: length-controlling



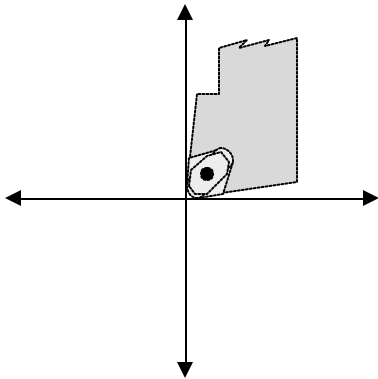
A CNC lathe has two linear axes: X Z

4



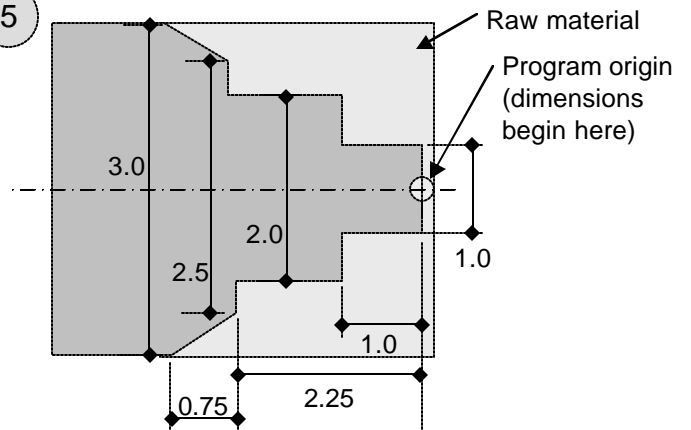
The program origin is chosen by the programmer and is usually on the workpiece.

2



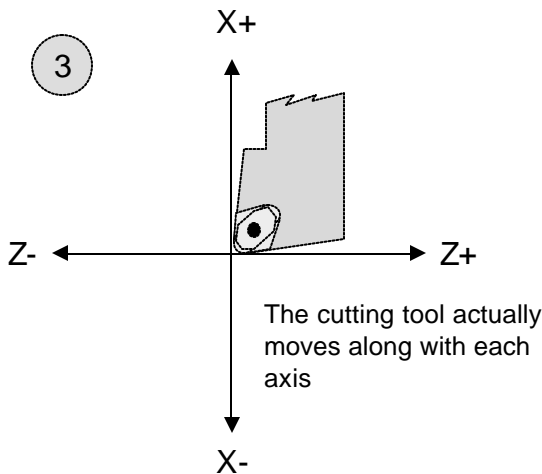
Cutting tools can machine along each axis.

5



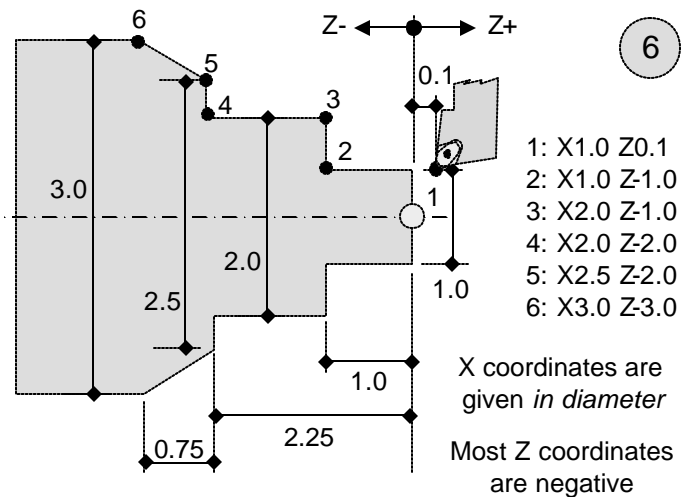
Choose the origin based upon dimensioning.

3



Each axis has a polarity.

6



- 1: X1.0 Z0.1
- 2: X1.0 Z-1.0
- 3: X2.0 Z-1.0
- 4: X2.0 Z-2.0
- 5: X2.5 Z-2.0
- 6: X3.0 Z-3.0

X coordinates are given in diameter  
Most Z coordinates are negative

Coordinates are specified from the program origin.

## Exercises 1-3:

1) Type these coordinates into NCPlot and execute:  
Also in the file exerciset1.nc

X1.0	Z0.1
X1.0	Z-1.0
X2.0	Z-1.0
X2.0	Z-2.0
X2.5	Z-2.0
X3.0	Z-3.0

2) Load the file named exerciset2.nc and execute it. Notice that the cutting tool will simply follow the specified series of coordinates, and that coordinates are specified from an origin point.

3) Load the file named exerciset3.nc and execute it. This file has more coordinates. Again, notice that the cutting tool will follow the series of specified coordinates.