CONSTRUCTING ANGLES OF 90°, 45° and 22.5°

To construct or build an angle of 90°, we construct a perpendicular from a point which is located on a line segment.

CONSTRUCTION 90°

First draw a line segment EF of line L. Release your compasses to an appropriate separation. Using E as centre, construct an arc to intersect the line L at M and N.
Then release your compasses to more than half the distance of MN. Using M and N as centres, construct two arcs to intersect above the line L at O. Now draw a straight line passing through the point E and O. We have finally constructed angle FEO of size 90°.

CONSTRUCTION 45°

To construct an angle of 45°, we now bisect the angle of size 90°.
Using T and N as centres, bisect angle FEO=90°. Then angle FEG is our angle of size 45°.

CONSTRUCTION 22.5°

To construct an angle of 22.5°, we now bisect the angle of size 45°.
Using S and N as centres, bisect angle FEG=45°. Then angle FEU is our angle of size 22.5°

Look at construction below

O

G

U

T

90° S

45°

L   M   N   22.5°

E   F