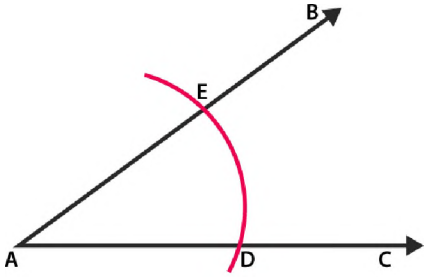
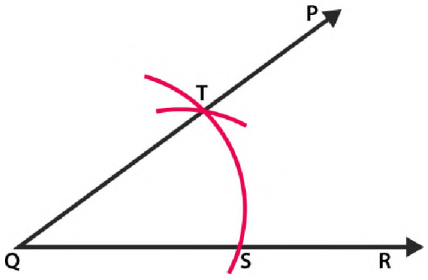
Exercise 17.2

Question 1: Draw an angle and label it as ∠BAC. Construct another angle, equal to ∠BAC.

Solution:
Steps of construction:

Step 1: Draw any angle ABC.
Now will construct an angle equal to ∠BAC
Step 2: Draw a line segment QR.
Step 3: Draw an arc which intersects ∠BAC at E and D using A as center and choose any radius.
Step 4: With same measurements (set in step 2), Draw an arc from point Q.
Step 5: With S as center and radius equal to DE, draw an arc which intersects the previous arc at T.
Step 6: Join Q and T.



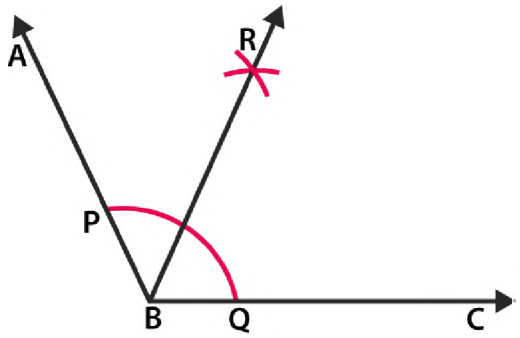


Therefore ∠PQR= ∠BAC

Question 2: Draw an obtuse angle. Bisect it. Measure each of the angles so formed.

Solution:
Steps of construction:
Step 1: Draw an obtuse angle. We choose ∠ABC = 120^0.
Step 2: Draw an arc which intersects AB at P and BC at Q, from center B and choose any radius.
Step 3: Draw an arc from point P by setting radius more than half of PQ.
Step 4: Repeat step 3 using Q as center and cut the previous arc at R.

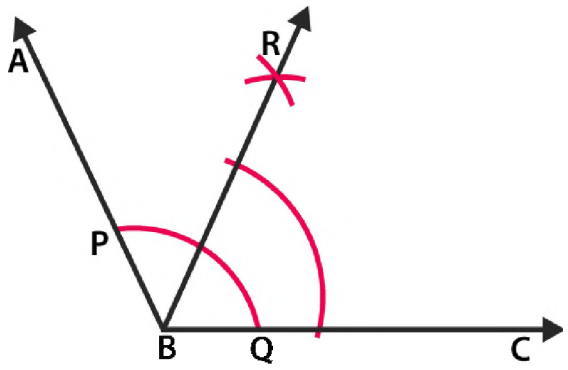
Step 5: Join BR.



Therefore ∠ABR= ∠RBC = 60^0

Question 3: Using your protractor, draw an angle of 108^0. With this given angle as given, draw an angle of 54^0.

Solution:
Steps of construction:
Step 1: Draw ∠ABC = 108^0.
Step 2: Draw an arc which intersects AB at P and BC at Q from point B. (Choose any radius)
Step 3: Draw an arc from point P by setting radius more than half of PQ.
Step 4: Repeat Step 3 using Q as the centre and intersect the previous arc at R.
Step 5: Join BR.
Therefore ∠RBC = 54^0



Question 4: Using the protractor, draw a right angle. Bisect it to get an angle of measure 45^0.

Solution:

Steps of construction:

Step 1: Draw $\angle ABC = 90^0$.

Step 2: Draw an arc which intersects AB at P and BC at Q from point B. (Choose any radius)

Step 3: Draw an arc from point P by setting radius more than half of PQ.

Step 4: Repeat step 3 using Q as a centre and intersect the previous arc at R.

Step 5: Join RB.

Therefore $\angle RBC = 45^0$