EXERCISE 18.1 PAGE: 18.3

1. Construct the following angles using set-squares:

(i) 45^0

(ii) 90^0

(iii) 60^0

(iv) 105^0

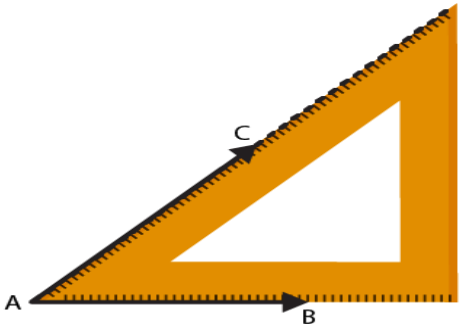
(v) 75^0

(vi) 150^0

Solution:

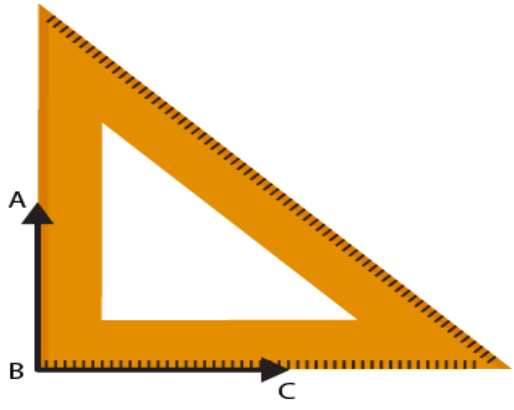
(i) Now place 45^0 using set square. Construct two rays AB and AC along the edges from the vertex A of 45^0 angle of the set square. So the angle formed is 45^0

Hence, $\angle BAC = 45^0$



(ii) Now place 90^0 using set square. Construct two rays BC and BA along the edges from the vertex B of 90^0 angle of the set square. So the angle formed is 90^0

Hence, $\angle ABC = 90^0$



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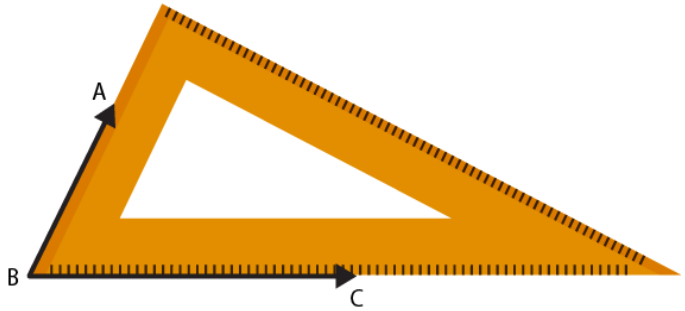
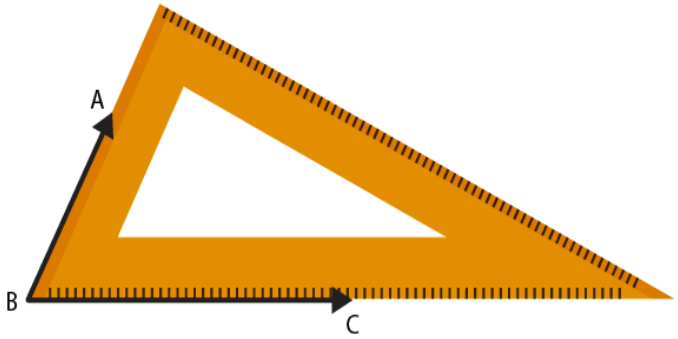
(iii) Now place 60^0 using set square. Construct two rays BC and BA along the edges from the vertex B of 60^0 angle of the set square. So the angle formed is 60^0

Hence, $\angle ABC = 60^0$

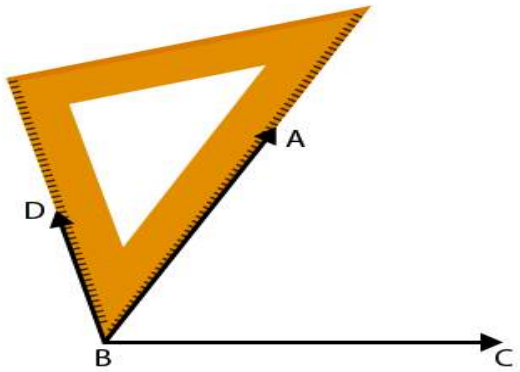


(iv) Now place 30^0 using set square and make an angle 60^0. Construct two rays BA and BC as given in figure.

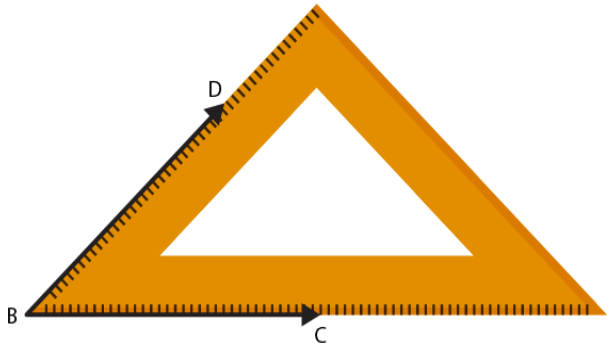


Place the set square of angle 45^0 of the set-square on the ray BA and draw the ray BD. So the angle formed is 105^0.

Hence, $\angle DBC = 105^0$

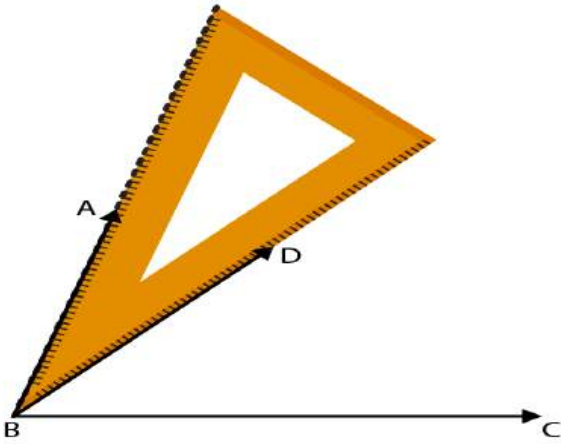


(v) Now place 45^0 using set square and make an angle 45^0. Construct two rays BC and BD as shown in figure.

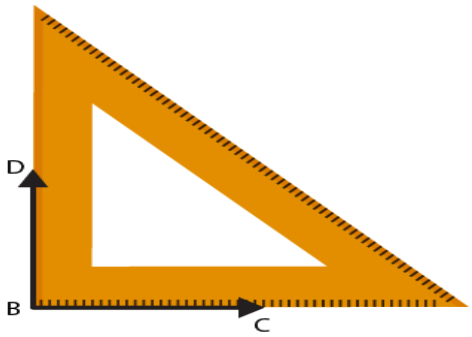


Place the vertex of 30^0 of the set square on the ray BD and draw the ray BA. So the angle formed is 75^0

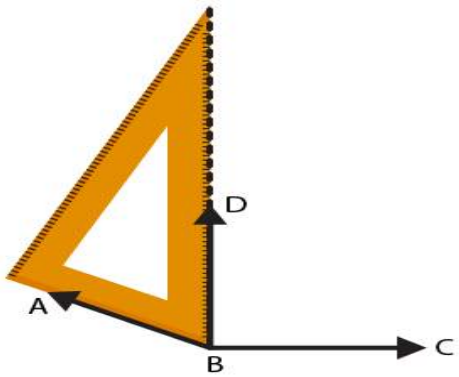
Hence, $\angle ABC = 75^0$.



(vi) Now place the vertex of 45^0 of the set square and make an angle 90^0 and construct two rays BD and BC as shown in figure.



Place the vertex of 30^0 of the set square on the ray BC and draw the ray BA. So the angle formed is 150^0



Hence, $\angle ABC = 150^0$

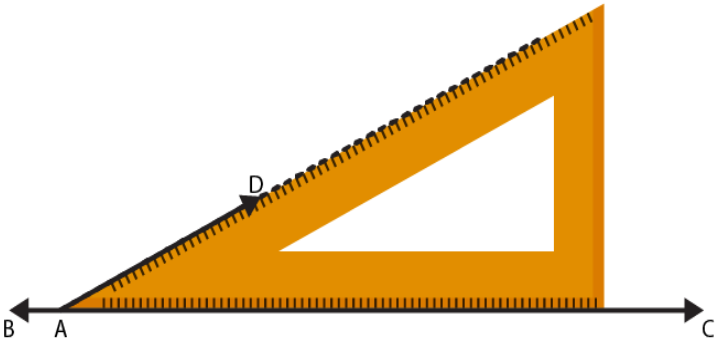
2. Given a line BC and a point A on it, constructed a ray AD using set squares so that ∠DAC is

(i) 30^0

(ii) 150^0

Solution:

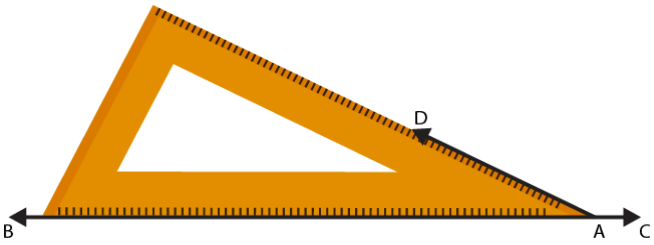
(i) Construct a line BC and mark a point A on it. Now place a 30^0 set square on the line BC where its vertex of 30^0 angle lies on point A and one edge coincides with the ray AB as shown in figure. Construct the ray AD.



Hence, the required $\angle DAC = 30^0$

(ii) Construct a line BC and mark a point A on it. Now place 30^0 set square on the line BC where its vertex of 30^0 lies on point A and one edge coincides with the ray AB as shown in figure. Construct the ray AD

Hence, $\angle DAB = 30^0$



We know that the angle on one side of the straight line will always add to 180^0

So we get $\angle DAB + \angle DAC = 180^0$

Hence, $\angle DAC = 150^0$