Exercise 4D

Question 14:

Let ABC be a triangle and $\angle B > \angle A + \angle C$

Since, $\angle A + \angle B + \angle C = 180^\circ$

$\Rightarrow \angle A + \angle C = 180^\circ - \angle B$

Therefore, we get

$\angle B > 180^\circ - \angle B$

Adding $\angle B$ on both sides of the inequality, we get,

$\Rightarrow \angle B + \angle B > 180^\circ - \angle B + \angle B$

$\Rightarrow 2\angle B > 180^\circ$

$\Rightarrow \angle B > 180/2 = 90^\circ$

i.e., $\angle B > 90^\circ$ which means $\angle B$ is an obtuse angle.

ΔABC is an obtuse angled triangle.

Question 15:

Since $\angle ACB$ and $\angle ACD$ form a linear pair.

So, $\angle ACB + \angle ACD = 180^\circ$

$\Rightarrow \angle ACB + 128^\circ = 180^\circ$

$\Rightarrow \angle ACB = 180^\circ - 128 = 52^\circ$

Also, $\angle ABC + \angle ACB + \angle BAC = 180^\circ$

$\Rightarrow 43^\circ + 52^\circ + \angle BAC = 180^\circ$

$\Rightarrow 95^\circ + \angle BAC = 180^\circ$

$\Rightarrow \angle BAC = 180^\circ - 95^\circ = 85^\circ$

$\therefore \angle ACB = 52^\circ$ and $\angle BAC = 85^\circ$.

Question 16:

As $\angle DBA$ and $\angle ABC$ form a linear pair.

So, $\angle DBA + \angle ABC = 180^\circ$

$\Rightarrow 106^\circ + \angle ABC = 180^\circ$

$\Rightarrow \angle ABC = 180^\circ - 106^\circ = 74^\circ$

Also, $\angle ACB$ and $\angle ACE$ form a linear pair.

So, $\angle ACB + \angle ACE = 180^\circ$

$\Rightarrow \angle ACB + 118^\circ = 180^\circ$

$\Rightarrow \angle ACB = 180^\circ - 118^\circ = 62^\circ$

In $\angle ABC$, we have,

$\angle ABC + \angle ACB + \angle BAC = 180^\circ$

$74^\circ + 62^\circ + \angle BAC = 180^\circ$

$\Rightarrow 136^\circ + \angle BAC = 180^\circ$

$\Rightarrow \angle BAC = 180^\circ - 136^\circ = 44^\circ$

$\therefore$ In triangle ABC, $\angle A = 44^\circ$, $\angle B = 74^\circ$ and $\angle C = 62^\circ$

*********** END **********