5.) Ans In isosceles $\triangle ABC$, we have

$AB = AC$

$\angle ABC = \angle ACB$

[Angle opposite to equal sides are equal]

Now in isosceles $\triangle DCB$, we have $BD = CD$

$\angle DBC = \angle DCB$

Adding (i) and (ii)

$\angle ABC + \angle DBC = \angle ACB + \angle DCB$

$\Rightarrow \angle ABD = \angle ACD$

6.) $AB = AC$

$\angle ACB = \angle ABC$

[Angles opposite to equal sides are equal]

Adding (i) and (ii)

$\angle ACB + \angle ACD = \angle ABC + \angle ADC$

$\Rightarrow \angle BCD = \angle ABC + \angle ADC$

Now, in $\triangle BCD$, we have

$\cancel{\angle BCD}$ $\angle BCD + \angle DBC + \angle BDC = 180^\circ$

$\therefore \angle BCD + \angle BCD = 180^\circ$

$2\angle BCD = 180^\circ$

$\angle BCD = 90$

Hence, $\angle BCD = 90^\circ$ or a right angle.

7.) In $\triangle ABC$, we have

$\angle A = 90$ and $AB = AC$ } Given.

We know that angle opposite to equal sides of an isosceles triangle are equal

So, $\angle B = \angle C$

Since $\angle A = 90°$, therefore sum of remaining two angle $= 90°$

Hence, $\angle B = \angle C = 45$

8.) AS $\triangle ABC$ is an equilateral

So, $AB = BC = AC$

Now, $AB = AC$

$\Rightarrow \angle ACB = \angle ABC$

Again $BC = AC$

$\Rightarrow \angle BAC = \angle ABC$

Now in $\triangle ABC$

$\angle ABC + \angle ACB + \angle BAC = 180°$

~~$\Rightarrow \angle ABC + \angle B = 180$~~

$\Rightarrow \angle ABC = 180°$

$\Rightarrow \angle ABC = \frac{180}{3} = 60$

Also, from (I) and (II)

$\angle ACB = 60°$ and $\angle BAC = 60°$

Hence, each angle of an equilateral triangle is $60°$.