(i) The given statement is as follows.

p: the sum of an irrational number and a rational number is irrational.

Let us assume that the given statement, *p*, is false. That is, we assume that the sum of an irrational number and a rational number is rational.

Therefore, $\sqrt{a}+\frac{b}{c}=\frac{d}{e}$, where $\sqrt{a}$ is irrational and *b*, *c*, *d*, *e* are integers.

$\frac{d}{e}-\frac{b}{c}$ is a rational number and $\sqrt{a}$ is an irrational number.

This is a contradiction. Therefore, our assumption is wrong.

Therefore, the sum of an irrational number and a rational number is rational.

Thus, the given statement is true.

(ii) The given statement, *q*, is as follows.

If n is a real number with $n > 3$, then $n^2 > 9$.

Let us assume that n is a real number with $n > 3$, but $n^2 > 9$ is not true.

That is, $n^2 < 9$

Then, $n > 3$ and n is a real number.

Squaring both the sides, we obtain

$n^2 > (3)^2$

$\Rightarrow n^2 > 9$, which is a contradiction, since we have assumed that $n^2 < 9$.

Thus, the given statement is true. That is, if n is a real number with $n > 3$, then $n^2 > 9$.

Question 7:

Write the following statement in five different ways, conveying the same meaning.

p: If triangle is equiangular, then it is an obtuse angled triangle.

Answer :

The given statement can be written in five different ways as follows.

(i) A triangle is equiangular implies that it is an obtuse-angled triangle.

(ii) A triangle is equiangular only if it is an obtuse-angled triangle.

(iii) For a triangle to be equiangular, it is necessary that the triangle is an obtuse-angled triangle.

(iv) For a triangle to be an obtuse-angled triangle, it is sufficient that the triangle is equiangular.

(v) If a triangle is not an obtuse-angled triangle, then the triangle is not equiangular.