RD Sharma Solutions Class 11 Maths Chapter 31 Ex 31.2

Mathematical Reasoning Ex 31.2 Q1

The negation of the statement:

Banglore is the capital of Karnataka.

is

Banglore is not the capital of Karnataka.

The negation of the statement:

It rained on July 4,2005.

is

It did not rain on July 4,2005.

The negation of the statement:

Ravish is honest.

is

Ravish is not honest.

The negation of the statement:

The earth is round.

is

The earth is not round.

The negation of the statement:

The sun is cold.

is

The sun is not cold.

Mathematical Reasoning Ex 31.2 Q2

The negation of the statements

All birds sing.

is

Not all birds sing.

The negation of the statements

Some even integers are prime.

is

No even integers is prime.

The negation of the statements

There is a complex number which is not a real number.

is

All complex numbers are real numbers.

The negation of the statements

I will not go to school.

is

I will go to school.

The negation of the statements

Both the diagonals of a rectangle have the same length.

is

There is at least one rectangle whose both diagonals do not have the same length.

The negation of the statements

All policemen are thieves.

is

No policemen is thief.

Mathematical Reasoning Ex 31.2 Q3

(i) The number x is not a rational number.

$\Rightarrow$ The number x is an irrational number.

$\therefore$ The statement "The number x is not an irrational number." is a negation of the first statement.

(ii) The number x is not a rational number.

$\Rightarrow$ The number x is an irrational number.

$\therefore$ The statement "The number x is an irrational number" is not a negation of the first statement.

Mathematical Reasoning Ex 31.2 Q4

(i)

The negation of the statement:

p : For every positive real number x, the number $(x-1)$ is also positive.

is

$\sim p$: There exists a positive real number x such that the number $(x-1)$ is not positive.

(ii)

The negation of the statement:

q : For every real number x, either $x > 1$ or $x < 1$.

is

$\sim q$: There exists a real number such that neither $x > 1$ or $x < 1$.

(iii)

The negation of the statement:

r : There are exists a number x such that $0 < x < 1$.

is

$\sim r$: For every real number x, either $x \leq$ or $x \geq 1$.

Mathematical Reasoning Ex 31.2 Q5

The negation of the statement

$a + b = b + a$ is true for every real number a and b.

is:

There exist real numbers a and b for which $a + b \neq b + a$.

So, the given statement is not the negation of the first statement.