

Exemplar Problem

Mathematical Reasoning

2. Find the component statements of the following compound statements.

(i) Number 7 is prime and odd.

Solution:

A compound statement is a combination of two statements (Components).

So, the components of the given statement "Number 7 is prime and odd" are,

p: Number 7 is prime.

q: Number 7 is odd.

(ii) Chennai is in India and is the capital of Tamil Nadu.

Solution:

A compound statement is a combination of two statements (Components).

So, the components of the given statement "Chennai is in India and is the capital of Tamil Nadu" are,

p: Chennai is in India.

q: Chennai is the capital of Tamil Nadu

(iii) The number 100 is divisible by 3, 11 and 5.

Solution:

A compound statement is a combination of two statements (Components).

So, the components of the given statement "The number 100 is divisible by 3, 11 and 5".

p: 100 is divisible by 3.

q: 100 is divisible by 11.

r: 100 is divisible by 5.

(iv) Chandigarh is the capital of Haryana and U.P.

Solution:

A compound statement is a combination of two statements (Components).

So, the components of the given statement "Chandigarh is the capital of Haryana and U.P." are,

p: Chandigarh is the capital of Haryana and U.P

q: Chandigarh is the capital of U.P

(v) $\sqrt{7}$ is a rational number or an irrational number.

Solution:

A compound statement is a combination of two statements (Components).

So, The components of the given statement $\sqrt{7}$ is a rational number or an irrational number,

p: $\sqrt{7}$ is a rational number.

q: $\sqrt{7}$ is an irrational