

Exemplar Problem

Mathematical Reasoning

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

(vi) 0 is less than every positive integer and every negative integer.

Solution:

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

So, the components of the given statement 0 is less than every positive integer and every negative integer are

p: 0 is less than every positive integer

q: 0 is less than every negative integer.

(vii) Plants use sunlight, water and carbon dioxide for photosynthesis.

Solution:

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

So, the components of the given statement "Plants use sunlight, water and carbon dioxide for photosynthesis" are

p: Plants use sunlight for photosynthesis

q: Plants use water for photosynthesis

r: Plants use carbon dioxide for photosynthesis

(viii) Two lines in a plane either intersect at one point or they are parallel.

Solution:

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

So, the components of the given statement Two lines in a plane either intersect at one point or they are parallel "are

p: Two lines in a plane intersect at one point.

q: Two lines in a plane are parallel.

(ix) A rectangle is a quadrilateral or a 5 – sided polygon.

Solution:

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

So, the components of the given statement "A rectangle is a quadrilateral or a 5 – sided polygon" are

p: A rectangle is a quadrilateral

q: A rectangle is a 5 – sided polygon.