

## Exemplar Problem

### Mathematical Reasoning

**Which of the following sentences are statements? Justify**

(i) A triangle has three sides.

**Solution:**

A statement is a declarative sentence if it is either true or false but not both.

So, the given sentence is true.

Hence, it is a true statement

**(ii) 0 is a complex number.**

**Solution:**

A statement is a declarative sentence if it is either true or false but not both.

So, the given sentence "0 is a complex number" is true. Because we can write it as  $a+ib$ , where imaginary part is 0 as,  $a+0i$ .

Hence, it is a true statement

**(iii) Sky is red.**

**Solution:**

A statement is a declarative sentence if it is either true or false but not both.

The given sentence "sky is Red" is false.

Hence, it is a false statement

**(iv) Every set is an infinite set.**

**Solution:**

A statement is a declarative sentence if it is either true or false but not both.

The given sentence "Every set is an infinite set" is False.

Hence, it is a false statement