Answer on Question #54797 – Math – Abstract Algebra

16 The following are true except

(a) If every element of a set B is an element of a set A, then B is a subset of A.

(b) A is a subset of B is denoted by $A \subset B$

(c) Two sets A and B are equal if and only if $A \subseteq B$ and $B \subseteq A$

(d) Two sets A and B are equal if and only if A = -B and B = A

17 If $A = \{a + i\,b \mid a, b \in R\}$, then A is a set of …… numbers

(a) rational (b) natural (c) real (d) complex

Solution

16 The following are true except (d). Counterexample: $A=\{1,2\}=B$. But $-B=\{-1,-2\}\neq A$

17 The definition of the complex number is the following:

a complex number is a number that can be expressed in the form $a + bi$, where a and b are real numbers and i is the imaginary unit, that satisfies the equation $i^2 = -1$.

In the expression $a + bi$, a is the *real part* and b is the *imaginary part* of the complex number $a + bi$.

Answer:

16 (d)

17 (d)