

1.1 Variables

p. 6 #1-9, 11, 13

- ① a) x^2 equals -1
b) a real number x

- ② a) a remainder of 2 when divided by 5 and a remainder of 3 when divided by 6
b) an integer n ;
 n is divided by 6 the remainder is 3?

Note: An example is 27.

- ③ a) greater than a and less than b
b) real numbers a and b ;
there exists a real number c

- ④ a) a real number;
greater than r
b) real number r ;
there exists a real number s

- ⑤ a) r is positive
b) positive;
the reciprocal of r is positive
c) is positive;
its reciprocal is also positive

- ⑥ a) s is negative
b) negative;
the cube root of s is negative
c) is negative;
its cube root is also negative

- ⑦ a) There exist real numbers u and v such that $u+v$ is less than $u-v$.
 \Rightarrow True: $u=0, v=-1$
b) There exists a real number x such that x^2 is less than x .
 \Rightarrow True: $x=0.1$
c) For any positive integer n , n^2 is greater than or equal to n .
 \Rightarrow True: $n^2 \geq n$
 $n \geq 1$ ✓
d) Given any real numbers a and b , the absolute value of $a+b$ is less than or equal to $|a|$ plus $|b|$.
 \Rightarrow False: $a=3, b=-3$

- ⑧ a) have 4 sides.
b) has 4 sides.
c) has 4 sides.
d) is a square;
has 4 sides
e) \perp has 4 sides

- ⑨ a) have at most 2 real solutions
 b) has at most 2 real solutions
 c) has at most 2 real solutions
 d) is quadratic;
 has at most 2 real solutions
 e) E has at most 2 real solutions

- ⑩ a) have a positive square root
 b) a positive square root
 c) r is the square root of e

- ⑬ a) real number;
 product with every real number
 is zero
 b) and any real number is zero
 c) the product of a and b is zero

- ⑧ a) have 4 sides
 b) has 4 sides
 c) has 4 sides
 d) is a square
 has 4 sides
 e) 2 and 4 sides

1.1.1

- ① a) $x^2 = 1$
 a real number x
- ② a) a remainder of 2 when divided
 by 2 and a remainder of 3
 when divided by 3
 an integer n
 n is divided by 6 the
 remainder is 5?
 Note: an example is 5.
- ③ a) greater than a and less than
 b) real number a and b;
 there exists a real number
- ④ a) a real number;
 greater than 1
 b) real number r;
 there exists a real number 2
- ⑤ a) 1 is positive
 b) positive;
 the reciprocal of 1 is positive
 c) is positive;
 its reciprocal is also positive