

**S.CP.A.1: Set Theory 3**

- 1 Which interval notation represents the set of all numbers from 2 through 7, inclusive?
  - 1)  $(2, 7)$
  - 2)  $(2, 7]$
  - 3)  $[2, 7)$
  - 4)  $[2, 7]$
  
- 2 Which interval notation represents the set of all numbers greater than or equal to 5 and less than 12?
  - 1)  $[5, 12)$
  - 2)  $(5, 12]$
  - 3)  $(5, 12)$
  - 4)  $[5, 12]$
  
- 3 Which interval notation represents the set of all real numbers greater than 2 and less than or equal to 20?
  - 1)  $(2, 20)$
  - 2)  $(2, 20]$
  - 3)  $[2, 20)$
  - 4)  $[2, 20]$
  
- 4 In interval notation, the set of all real numbers greater than  $-6$  and less than or equal to 14 is represented by
  - 1)  $(-6, 14)$
  - 2)  $[-6, 14)$
  - 3)  $(-6, 14]$
  - 4)  $[-6, 14]$
  
- 5 Which interval notation describes the set  $S = \{x \mid 1 \leq x < 10\}$ ?
  - 1)  $[1, 10]$
  - 2)  $(1, 10]$
  - 3)  $[1, 10)$
  - 4)  $(1, 10)$
  
- 6 Which interval notation describes the set  $S = \{x \mid -5 < x \leq 6\}$ ?
  - 1)  $[-5, 6]$
  - 2)  $(-5, 6]$
  - 3)  $[-5, 6)$
  - 4)  $(-5, 6)$
  
- 7 Which interval notation represents  $-3 \leq x \leq 3$ ?
  - 1)  $[-3, 3]$
  - 2)  $(-3, 3]$
  - 3)  $[-3, 3)$
  - 4)  $(-3, 3)$
  
- 8 The inequality  $-2 \leq x \leq 3$  can be written as
  - 1)  $(-2, 3)$
  - 2)  $[-2, 3)$
  - 3)  $(-2, 3]$
  - 4)  $[-2, 3]$
  
- 9 Which notation is equivalent to the inequality  $-3 < x \leq 7$ ?
  - 1)  $[-3, 7]$
  - 2)  $(-3, 7]$
  - 3)  $[-3, 7)$
  - 4)  $(-3, 7)$

10 Which set of integers is included in  $(-1, 3]$ ?

- 1)  $\{0, 1, 2, 3\}$
- 2)  $\{-1, 0, 1, 2\}$
- 3)  $\{-1, 0, 1, 2, 3, 4\}$
- 4)  $\{-2, -1, 0, 1, 2, 3\}$

11 The set of integers in  $[6, 10)$  can be written as

- 1)  $\{6, 7, 8, 9, 10\}$
- 2)  $\{7, 8, 9, 10\}$
- 3)  $\{6, 7, 8, 9\}$
- 4)  $\{7, 8, 9\}$

12 Which set-builder notation describes

- $\{-3, -2, -1, 0, 1, 2\}$ ?
- 1)  $\{x \mid -3 \leq x < 2, \text{ where } x \text{ is an integer}\}$
  - 2)  $\{x \mid -3 < x \leq 2, \text{ where } x \text{ is an integer}\}$
  - 3)  $\{x \mid -3 < x < 2, \text{ where } x \text{ is an integer}\}$
  - 4)  $\{x \mid -3 \leq x \leq 2, \text{ where } x \text{ is an integer}\}$

13 Which set builder notation describes

- $\{-2, -1, 0, 1, 2, 3\}$ ?
- 1)  $\{x \mid -3 \leq x \leq 3, \text{ where } x \text{ is an integer}\}$
  - 2)  $\{x \mid -3 < x \leq 4, \text{ where } x \text{ is an integer}\}$
  - 3)  $\{x \mid -2 < x < 3, \text{ where } x \text{ is an integer}\}$
  - 4)  $\{x \mid -2 \leq x < 4, \text{ where } x \text{ is an integer}\}$

14 Written in set-builder notation,  $S = \{1, 3, 5, 7, 9\}$  is

- 1)  $\{x \mid 1 < x < 9, \text{ where } x \text{ is a prime number}\}$
- 2)  $\{x \mid 1 \leq x \leq 9, \text{ where } x \text{ is a prime number}\}$
- 3)  $\{x \mid 1 < x < 9, \text{ where } x \text{ is an odd integer}\}$
- 4)  $\{x \mid 1 \leq x \leq 9, \text{ where } x \text{ is an odd integer}\}$

15 The set  $\{1, 2, 3, 4\}$  is equivalent to

- 1)  $\{x \mid 1 < x < 4, \text{ where } x \text{ is a whole number}\}$
- 2)  $\{x \mid 0 < x < 4, \text{ where } x \text{ is a whole number}\}$
- 3)  $\{x \mid 0 < x \leq 4, \text{ where } x \text{ is a whole number}\}$
- 4)  $\{x \mid 1 < x \leq 4, \text{ where } x \text{ is a whole number}\}$

16 The set  $\{11, 12\}$  is equivalent to

- 1)  $\{x \mid 11 < x < 12, \text{ where } x \text{ is an integer}\}$
- 2)  $\{x \mid 11 < x \leq 12, \text{ where } x \text{ is an integer}\}$
- 3)  $\{x \mid 10 \leq x < 12, \text{ where } x \text{ is an integer}\}$
- 4)  $\{x \mid 10 < x \leq 12, \text{ where } x \text{ is an integer}\}$

17 Which notation describes  $\{1, 2, 3\}$ ?

- 1)  $\{x \mid 1 \leq x < 3, \text{ where } x \text{ is an integer}\}$
- 2)  $\{x \mid 0 < x \leq 3, \text{ where } x \text{ is an integer}\}$
- 3)  $\{x \mid 1 < x < 3, \text{ where } x \text{ is an integer}\}$
- 4)  $\{x \mid 0 \leq x \leq 3, \text{ where } x \text{ is an integer}\}$

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**Answer Section**

1	ANS: 4	REF: fall0704ia
2	ANS: 1	REF: 061021ia
3	ANS: 2	REF: 011119ia
4	ANS: 3	REF: 081117ia
5	ANS: 3	REF: 061217ia
6	ANS: 2	REF: 061620ia
7	ANS: 1	REF: 061310ia
8	ANS: 4	REF: 011318ia
9	ANS: 2	REF: 061411ia
10	ANS: 1	REF: 081430ia
11	ANS: 3	REF: 061529ia
12	ANS: 4	REF: 081022ia
13	ANS: 4	REF: 011222ia
14	ANS: 4	REF: 081321ia
15	ANS: 3	REF: 010917ia
16	ANS: 4	REF: 060930ia
17	ANS: 2	REF: 061128ia