

A.REI.B.3: Interpreting Solutions

- 1 The statement $|-15| < x < |-20|$ is true when x is equal to
 - 1) -16
 - 2) -14
 - 3) 17
 - 4) 21

- 2 In the set of positive integers, what is the solution set of the inequality $2x - 3 < 5$?
 - 1) $\{0, 1, 2, 3\}$
 - 2) $\{1, 2, 3\}$
 - 3) $\{0, 1, 2, 3, 4\}$
 - 4) $\{1, 2, 3, 4\}$

- 3 Which number is in the solution set of the inequality $5x + 3 > 38$?
 - 1) 5
 - 2) 6
 - 3) 7
 - 4) 8

- 4 Which value of x is in the solution set of the inequality $-2x + 5 > 17$?
 - 1) -8
 - 2) -6
 - 3) -4
 - 4) 12

- 5 Which value of x is in the solution set of $-3x + 8 \geq 14$?
 - 1) -3
 - 2) -1
 - 3) 0
 - 4) 3

- 6 Which value of x is in the solution set of the inequality $-4x + 2 > 10$?
 - 1) -2
 - 2) 2
 - 3) 3
 - 4) -4

- 7 Which value would be a solution for x in the inequality $47 - 4x < 7$?
 - 1) -13
 - 2) -10
 - 3) 10
 - 4) 11

- 8 Which value of x is a solution of the inequality $25x - 100 < 250$?
 - 1) 13
 - 2) 14
 - 3) 15
 - 4) 16

- 9 Which value of x is in the solution set of $\frac{4}{3}x + 5 < 17$?
- 1) 8
 - 2) 9
 - 3) 12
 - 4) 16
- 10 Which value of x is in the solution set of the inequality $-2(x - 5) < 4$?
- 1) 0
 - 2) 2
 - 3) 3
 - 4) 5
- 11 Which value of x is a solution of $-5x - 3 > -2x + 6$?
- 1) -4
 - 2) -3
 - 3) 3
 - 4) 0
- 12 Find all the negative odd integers that satisfy the following inequality: $-3x + 1 \leq 17$
- 13 Determine the smallest integer that makes $-3x + 7 - 5x < 15$ true.
- 14 Solve the inequality below to determine and state the smallest possible value for x in the solution set.
 $3(x + 3) \leq 5x - 3$
- 15 Given: $A = \{18, 6, -3, -12\}$
Determine all elements of set A that are in the solution of the inequality $\frac{2}{3}x + 3 < -2x - 7$.
- 16 Solve for x algebraically:
 $7x - 3(4x - 8) \leq 6x + 12 - 9x$
If x is a number in the interval $[4, 8]$, state all integers that satisfy the given inequality. Explain how you determined these values.
- 17 Given $2x + ax - 7 > -12$, determine the largest integer value of a when $x = -1$.

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Answer Section

1 ANS: 3 REF: 081317ia

2 ANS: 2
$$2x - 3 < 5$$
$$2x < 8$$
$$x < 4$$

REF: 060118a

3 ANS: 4
$$5x + 3 > 38$$
$$5x > 35$$
$$x > 7$$

REF: 060311a

4 ANS: 1
$$-2x + 5 > 17$$
$$-2x > 12$$
$$x < -6$$

REF: fall0724ia

5 ANS: 1
$$-3x + 8 \geq 14$$
$$-3x \geq 6$$
$$x \leq -2$$

REF: 081309ia

6 ANS: 4
$$-4x + 2 > 10$$
$$-4x > 8$$
$$x < -2$$

REF: 080805ia

7 ANS: 4
$$47 - 4x < 7$$
$$-4x < -40$$
$$x > 10$$

REF: 061713ai

8 ANS: 1
 $25x - 100 < 250$
 $25x < 350$
 $x < 14$

REF: 061517ia

9 ANS: 1
 $\frac{4}{3}x + 5 < 17$
 $\frac{4}{3}x < 12$
 $4x < 36$
 $x < 9$

REF: 060914ia

10 ANS: 4
 $-2(x - 5) < 4$
 $-2x + 10 < 4$
 $-2x < -6$
 $x > 3$

REF: 080913ia

11 ANS: 1
 $-5x - 3 > -2x + 6$
 $-9 > 3x$
 $-3 > x$

REF: 061622ia

12 ANS:
 $-3x + 1 \leq 17$
 $-5, -3, -1. \quad -3x \leq 16$
 $x \geq -\frac{16}{3}$

REF: 010536a

13 ANS:
 $-3x + 7 - 5x < 15$ 0 is the smallest integer.
 $-8x < 8$
 $x > -1$

REF: 061530ai

14 ANS:

$$6. 3x + 9 \leq 5x - 3$$

$$12 \leq 2x$$

$$6 \leq x$$

REF: 081430ai

15 ANS:

$$-12. 3\left(\frac{2}{3}x + 3 < -2x - 7\right)$$

$$x + 9 < -6x - 21$$

$$7x < -30$$

$$x < \frac{-30}{7}$$

REF: 061034ia

16 ANS:

$$7x - 3(4x - 8) \leq 6x + 12 - 9x \quad 6, 7, 8 \text{ are the numbers greater than or equal to } 6 \text{ in the interval.}$$

$$7x - 12x + 24 \leq -3x + 12$$

$$-5x + 24 \leq -3x + 12$$

$$12 \leq 2x$$

$$6 \leq x$$

REF: 081534ai

17 ANS:

$$2(-1) + a(-1) - 7 > -12 \quad a = 2$$

$$-a - 9 > -12$$

$$-a > -3$$

$$a < 3$$

REF: 061427ai