A.REI.D.10: Identifying Solutions 1

1 The solution of an equation with two variables, x and y, is
1) the set of all x values that make $y = 0$
2) the set of all y values that make $x = 0$
3) the set of all ordered pairs, (x,y), that make the equation true
4) the set of all ordered pairs, (x,y), where the graph of the equation crosses the y-axis

2 Which statement best describes the solutions of a two-variable equation?
1) The ordered pairs must lie on the graphed equation.
2) The ordered pairs must lie near the graphed equation.
3) The ordered pairs must have $x = 0$ for one coordinate.
4) The ordered pairs must have $y = 0$ for one coordinate.

3 Mrs. Rossano asked her students to explain why $(3,-4)$ is a solution to $2y + 3x = 1$. Three student responses are given below.
Andrea:
"When the equation is graphed on a calculator, the point can be found within its table."
Bill:
"Substituting $x = 3$ and $y = -4$ into the equation makes it true."
Christine:
"The graph of the line passes through the point $(3,-4)$."
Which students are correct?
1) Andrea and Bill, only
2) Bill and Christine, only
3) Andrea and Christine, only
4) Andrea, Bill, and Christine

4 Which linear equation represents a line that passes through the point $(-3,-8)$?
1) $y = 2x - 2$
2) $y = 2x - 8$
3) $y = 2x + 13$
4) $y = 2x - 14$

5 If point $(K,-5)$ lies on the line whose equation is $3x + y = 7$, then the value of K is
1) -8
2) -4
3) 22
4) 4

6 The point $(3,w)$ is on the graph of $y = 2x + 7$. What is the value of w?
1) -2
2) -4
3) 10
4) 13

7 Which ordered pair is a solution to the equation $y - 1 = 2\left(x + \frac{1}{4}\right)$?
1) $(0.75,0)$
2) $(1.25,4)$
3) $(2.5,-6.5)$
4) $(4,-9.5)$

8 Which ordered pair does *not* fall on the line formed by the other three?
1) $(16,18)$
2) $(12,12)$
3) $(9,10)$
4) $(3,6)$

9 Which ordered pair below is *not* a solution to $f(x) = x^2 - 3x + 4$?
1) $(0,4)$
2) $(1.5,1.75)$
3) $(5,14)$
4) $(-1,6)$

10 Which point is *not* on the graph represented by $y = x^2 + 3x - 6$?
1) $(-6,12)$
2) $(-4,-2)$
3) $(2,4)$
4) $(3,-6)$

11 Which ordered pair does *not* represent a point on the graph of $y = 3x^2 - x + 7$?
1) $(-1.5,15.25)$
2) $(0.5,7.25)$
3) $(1.25,10.25)$
4) $(2.5,23.25)$

12 Which point is *not* in the solution set of the equation $3y + 2 = x^2 - 5x + 17$?
1) $(-2,10)$
2) $(-1,7)$
3) $(2,3)$
4) $(5,5)$

13 Which point is a solution to $y = x^3 - 2x$?
1) $(-3,-21)$
2) $(-2,10)$
3) $(1,1)$
4) $(4,2)$

14 Which ordered pair would *not* be a solution to $y = x^3 - x$?
1) $(-4,-60)$
2) $(-3,-24)$
3) $(-2,-6)$
4) $(-1,-2)$

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Answer Section

1 ANS: 3 REF: 081602ai
2 ANS: 1 REF: 012011ai
3 ANS: 4 REF: 062218ai
4 ANS: 1 REF: 062303ai
5 ANS: 4

$3K - 5 = 7$

$3K = 12$

$K = 4$

REF: 082205ai
6 ANS: 4

$w = 2(3) + 7 = 13$

REF: 012302ai
7 ANS: 2

$4 - 1 = 2\left(\frac{5}{4} + \frac{1}{4}\right)$

$3 = 3$

REF: 012518ai
8 ANS: 1

$\frac{12-10}{12-9} = \frac{2}{3}$ $y - 6 = \frac{2}{3}(x - 3)$ $18 - 6 \neq \frac{2}{3}(16 - 3)$

REF: 062124ai
9 ANS: 4

$f(-1) = (-1)^2 - 3(-1) + 4 = 8$

REF: 061808ai
10 ANS: 4 REF: 081405ai
11 ANS: 3

$10.25 \neq 3(1.25)^2 - 1.25 + 7$

REF: 061918ai
12 ANS: 1

$3(10) + 2 \neq (-2)^2 - 5(-2) + 17$

$32 \neq 31$

REF: 081818ai

13 ANS: 1

$(-3)^3 - 2(-3) = -27 + 6 = -21$

REF: 082303ai

14 ANS: 4

$-2 \neq (-1)^3 - (-1)$

$-2 \neq 0$

REF: 011806ai