

**A.REI.D.11: Absolute Value Equations 1b**

- 1 What is the solution set of the equation  $|2x - 1| = 9$ ?
- 2 What is the solution set of the equation  $|2x + 1| = 9$ ?
- 3 What is the solution set for the equation  $|3x + 2| = 5$ ?
- 4 What is the solution set of the equation  $|4x - 3| = 17$ ?
- 5 What is the solution set for the equation  $|3 - 2x| = 5$ ?
- 6 What is the solution set of the equation  $|2 - 3x| = 5$ ?
- 7 The solution set of the equation  $|2x - 1| + 4 = 8$  is
- 8 What is the solution set of the equation  $|x - 6| + 4 = 10$ ?
- 9 The solution set of  $-|2x - 9| = -11$  is
- 10 What is the solution set of  $|x - 2| = 3x + 10$ ?
- 11 What is the solution set for the equation  $|3x - 1| = x + 5$ ?
- 12 What is the solution set for the equation  $2x + |x| = -2$ ?
- 13 What is the solution set of the equation  $|4a + 6| - 4a = -10$ ?
- 14 What is the solution set of the equation  $|x^2 - 2x| = 3x - 6$ ?

**A.REI.D.11: Absolute Value Equations 1b**  
**Answer Section**

1 ANS:  
 $\{5, -4\}$

REF: 068923siii

2 ANS:  
 $\{4, -5\}$

REF: 089717siii

3 ANS:  
 $\left\{1, -\frac{7}{3}\right\}$

REF: 089417siii

4 ANS:  
 $\left\{5, -\frac{7}{2}\right\}$

REF: 089518siii

5 ANS:  
 $\{-1, 4\}$

REF: 011005b

6 ANS:  
 $\left\{-1, \frac{7}{3}\right\}$

REF: 088727siii

7 ANS:  
 $\left\{\frac{5}{2}, -\frac{3}{2}\right\}$

REF: 010223siii

8 ANS:  
 $\{0, 12\}$

REF: 080222siii

9 ANS:

$$\{-1, 10\}$$

$$|2x - 9| = 11 \quad 2x - 9 = -11$$

$$2x - 9 = 11 \quad 2x = -2$$

$$2x = 20 \quad x = -1$$

$$x = 10$$

REF: 081614a2

10 ANS:

$$\{-2\}$$

$$x - 2 = 3x + 10 \quad -6 \text{ is extraneous. } x - 2 = -3x - 10$$

$$-12 = 2x \quad 4x = -8$$

$$-6 = x \quad x = -2$$

REF: 061513a2

11 ANS:

$$\{-1, 3\}$$

REF: 019624siii

12 ANS:

$$\{-2\}$$

REF: 089923siii

13 ANS:

$$\emptyset$$

$$4a + 6 = 4a - 10. \quad 4a + 6 = -4a + 10. \quad \left| 4\left(\frac{1}{2}\right) + 6 \right| - 4\left(\frac{1}{2}\right) = -10$$

$$6 \neq -10 \quad 8a = 4 \quad 8 - 2 \neq -10$$

$$a = \frac{4}{8} = \frac{1}{2}$$

REF: 011106a2

14 ANS:

$$\{2, 3\}$$

$$x^2 - 2x = 3x - 6 \quad x^2 - 2x = -3x + 6$$

$$x^2 - 5x + 6 = 0 \quad x^2 + x - 6 = 0$$

$$(x - 3)(x - 2) = 0 \quad (x + 3)(x - 2) = 0 \quad x = -3 \text{ is an extraneous solution since } 3(-3) - 6 = -15.$$

$$x = 3 \quad x = 2 \quad x = -3 \quad x = 2$$

REF: 080616b