## A.REI.B.4: Solving Quadratics 5

1 The larger root of the equation $(x+4)(x-3)=0$ is
 1) −4
 2) −3
 3) 3
 4) 4

2 The roots of the equation $2x^2 - 8x = 0$ are
 1) −2 and 2
 2) 0, −2 and 2
 3) 0 and −4
 4) 0 and 4

3 The roots of the equation $3x^2 - 27x = 0$ are
 1) 0 and 9
 2) 0 and −9
 3) 0 and 3
 4) 0 and −3

4 One of the roots of the equation $x^2 + 3x - 18 = 0$ is
 3. What is the other root?
 1) 15
 2) 6
 3) −6
 4) −21

5 What are the roots of the equation
 $x^2 - 10x + 21 = 0$?
 1) 1 and 21
 2) −5 and −5
 3) 3 and 7
 4) −3 and −7

6 What are the roots of the equation $x^2 - 7x + 6 = 0$?
 1) 1 and 7
 2) −1 and 7
 3) −1 and −6
 4) 1 and 6

7 What are the roots of the equation $x^2 - 5x + 6 = 0$?
 1) 1 and −6
 2) 2 and 3
 3) −1 and 6
 4) −2 and −3

8 The roots of the equation $x^2 - 14x + 48 = 0$ are
 1) −6 and −8
 2) −6 and 8
 3) 6 and −8
 4) 6 and 8

9 One root of the equation $2x^2 - x - 15 = 0$ is
 1) $\frac{5}{2}$
 2) $\frac{3}{2}$
 3) 3
 4) −3

10 Find the roots of the equation $x^2 = 30 - 13x$ algebraically.

11 Find the roots of the equation $x^2 - x = 6$ algebraically.

12 If the roots of a quadratic equation are −2 and 3, the equation can be written as
 1) $(x-2)(x+3)=0$
 2) $(x+2)(x-3)=0$
 3) $(x+2)(x+3)=0$
 4) $(x-2)(x-3)=0$

13 If the roots of a quadratic equation are −4 and 2, the equation is equivalent to
 1) $(x+4)(x-2)=0$
 2) $(x-4)(x+2)=0$
 3) $(x+4)(x+2)=0$
 4) $(x-4)(x-2)=0$

14 Which equation has roots of −3 and 5?
 1) $x^2 + 2x - 15 = 0$
 2) $x^2 - 2x - 15 = 0$
 3) $x^2 + 2x + 15 = 0$
 4) $x^2 - 2x + 15 = 0$

15 Form the quadratic equation whose roots are −5 and +7.

16 The two roots of an equation are −4 and +3. Form the equation.

17 Write a quadratic equation in standard form that has roots of −12 and 2.

18 Form an equation whose roots are 2 and $-\frac{4}{3}$.

19 Form the equation whose roots are $\frac{1}{2}$ and $-\frac{1}{3}$.

## A.REI.B.4: Solving Quadratics 5
## Answer Section

1  ANS:  3
  The two roots are –4 and 3.  The larger root is 3.

  REF:  069909a
2  ANS:  4
  $2x^2 - 8x = 0$

  $2x(x - 4) = 0$

  $x = 0, 4$

  REF:  011427ia
3  ANS:  1
  $3x^2 - 27x = 0$

  $3x(x - 9) = 0$

  $x = 0, 9$

  REF:  011223ia
4  ANS:  3
  $x^2 + 3x - 18 = 0$

  $(x + 6)(x - 3) = 0$

  $x = -6 \quad x = 3$

  REF:  080622a
5  ANS:  3
  $x^2 - 10x + 21 = 0$

  $(x - 7)(x - 3) = 0$

  $x = 7 \quad x = 3$

  REF:  010914ia
6  ANS:  4
  $x^2 - 7x + 6 = 0$

  $(x - 6)(x - 1) = 0$

  $x = 6 \quad x = 1$

  REF:  060902ia

7   ANS:  2

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

$$(x-3)(x-2) = 0$$

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

REF:  081120ia

8   ANS:  4

$$x^2 - 14x + 48 = 0$$

$$(x-6)(x-8) = 0$$

$$x = 6, 8$$

REF:  011320ia

9   ANS:  3

$$2x^2 - x - 15 = 0$$

$$(2x + 5)(x - 3) = 0$$

$$x = -\frac{5}{2} \quad x = 3$$

REF:  060104a

10   ANS:

$$-15, 2 \quad x^2 + 13x - 30 = 0$$

$$(x + 15)(x - 2) = 0$$

$$x = -15, 2$$

REF:  081036ia

11   ANS:

$$-2, 3. \qquad x^2 - x = 6$$

$$x^2 - x - 6 = 0$$

$$(x - 3)(x + 2) = 0$$

$$x = 3 \text{ or } -2$$

REF:  011034ia

12   ANS:  2          REF:  061326ia

13   ANS:  1          REF:  081420ia

14   ANS:  2

$$x^2 - 2x - 15 = 0$$

$$(x - 5)(x + 3) = 0$$

$$x = 5 \quad x = -3$$

REF:  011128ia

15  ANS:
$x^2 - 2x - 35 = 0$

REF:   019012al

16  ANS:
$x^2 + x - 12 = 0$

REF:   119207al

17  ANS:
$(x + 12)(x - 2) = 0$

$x^2 + 10x - 24 = 0$

REF:   061533ia

18  ANS:
$3x^2 - 2x - 8 = 0$

REF:   039112al

19  ANS:
$6x^2 - x - 1 = 0$

REF:   019311al