A.REI.B.4: Solving Quadratics 2

1 If the domain is the set of real numbers, what is the solution set for the equation $x^2 + 4 = 0$?
1) $\{-2\}$
2) $\{2\}$
3) $\{2,-2\}$
4) $\{\ \}$

2 The solution to $2x^2 = 72$ is
1) $\{9,4\}$
2) $\{-4,9\}$
3) $\{6\}$
4) $\{\pm 6\}$

3 What is the solution set of the equation $3x^2 = 48$?
1) $\{-2,-8\}$
2) $\{2,8\}$
3) $\{4,-4\}$
4) $\{4,4\}$

4 A solution of the equation $\frac{x^2}{4} = 9$ is
1) 12
2) 6
3) 3
4) $\frac{3}{2}$

5 If $4x^2 - 100 = 0$, the roots of the equation are
1) -25 and 25
2) -25, only
3) -5 and 5
4) -5, only

6 Solve $5x^2 = 180$ algebraically.

7 What is the positive solution of the equation $4x^2 - 36 = 0$?

8 Solve $6x^2 - 42 = 0$ for the exact values of x.

9 Solve the quadratic equation below for the exact values of x.

$$4x^2 - 5 = 75$$

10 Which value of x is a solution to the equation $13 - 36x^2 = -12$?
1) $\frac{36}{25}$
2) $\frac{25}{36}$
3) $-\frac{6}{5}$
4) $-\frac{5}{6}$

11 The solutions to $(x+4)^2 - 2 = 7$ are
1) $-4 \pm \sqrt{5}$
2) $4 \pm \sqrt{5}$
3) -1 and -7
4) 1 and 7

12 The solution of the equation $(x+3)^2 = 7$ is
1) $3 \pm \sqrt{7}$
2) $7 \pm \sqrt{3}$
3) $-3 \pm \sqrt{7}$
4) $-7 \pm \sqrt{3}$

13 A student is asked to solve the equation $4(3x-1)^2 - 17 = 83$. The student's solution to the problem starts as $4(3x-1)^2 = 100$

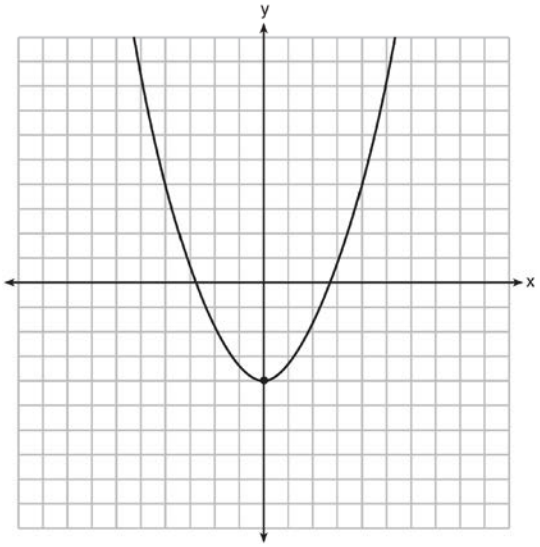
$$(3x-1)^2 = 25$$

A correct next step in the solution of the problem is
1) $3x - 1 = \pm 5$
2) $3x - 1 = \pm 25$
3) $9x^2 - 1 = 25$
4) $9x^2 - 6x + 1 = 5$

14 What is the solution of the equation $2(x+2)^2 - 4 = 28$?
1) 6, only
2) 2, only
3) 2 and -6
4) 6 and -2

15 What are the solutions to the equation $3(x-4)^2 = 27$?
1) 1 and 7
2) -1 and -7
3) $4 \pm \sqrt{24}$
4) $-4 \pm \sqrt{24}$

16 Ryker is given the graph of the function $y = \frac{1}{2}x^2 - 4$. He wants to find the zeros of the function, but is unable to read them exactly from the graph.



Find the zeros in simplest radical form.

A.REI.B.4: Solving Quadratics 2
Answer Section

1 ANS: 4 REF: 010324siii

2 ANS: 4

$2x^2 = 72$

$x^2 = 36$

$x = \pm 6$

REF: 062318ai

3 ANS: 3

$3x^2 = 48$

$3x^2 - 48 = 0$

$x^2 - 16 = 0$

$(x + 4)(x - 4) = 0$

$x = -4 \quad x = 4$

REF: 010215a

4 ANS: 2

$\frac{x^2}{4} = 9$

$x^2 = 36$

$x^2 - 36 = 0$

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

$x = -6 \quad x = 6$

REF: 010808a

5 ANS: 3 REF: 081403ai

6 ANS:

$5x^2 = 180$

$x^2 = 36$

$x = \pm 6$

REF: 061928ai

7 ANS:

$$\frac{4x^2}{4} - \frac{36}{4} = \frac{0}{4}$$

3. $x^2 - 9 = 0$

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

$x = -3 \quad x = 3$

REF: 080733a

8 ANS:

$6x^2 = 42$

$x^2 = 7$

$x = \pm\sqrt{7}$

REF: 081931ai

9 ANS:

$4x^2 = 80$

$x^2 = 20$

$x = \pm\sqrt{20}$

REF: 011932ai

10 ANS: 4

$36x^2 = 25$

$x^2 = \frac{25}{36}$

$x = \pm\frac{5}{6}$

REF: 011715ai

11 ANS: 3

$(x+4)^2 = 9$

$x + 4 = \pm 3$

$x = -1, -7$

REF: 012015ai

12 ANS: 3 REF: 081523ai

13 ANS: 1 REF: 061521ai

14 ANS: 3

$2(x+2)^2 = 32$

$(x+2)^2 = 16$

$x+2 = \pm 4$

$x = -6, 2$

REF: 061619ai

15 ANS: 1

$3(x-4)^2 = 27$

$(x-4)^2 = 9$

$x-4 = \pm 3$

$x = 1, 7$

REF: 011814ai

16 ANS:

$\frac{1}{2}x^2 - 4 = 0$

$x^2 - 8 = 0$

$x^2 = 8$

$x = \pm 2\sqrt{2}$

REF: fall1306ai