

A.REI.B.4: Solving Quadratics 1b

1 If the domain is the set of real numbers, what is the solution set for the equation $x^2 + 4 = 0$?

2 What is the solution set of the equation $3x^2 = 48$?

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

4 If $4x^2 - 100 = 0$, the roots of the equation are

5 Which value of x is a solution to the equation $13 - 36x^2 = -12$?

6 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

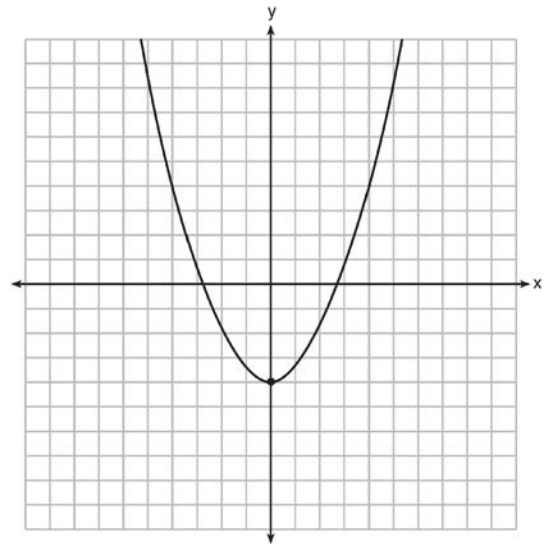
7 What is the solution of the equation $2(x + 2)^2 - 4 = 28$?

8 The solution of the equation $(x + 3)^2 = 7$ is

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

10 Find the zeros of $f(x) = (x - 3)^2 - 49$, algebraically.

11 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.

12 The height, H , in feet, of an object dropped from the top of a building after t seconds is given by $H(t) = -16t^2 + 144$. How many feet did the object fall between one and two seconds after it was dropped? Determine, algebraically, how many seconds it will take for the object to reach the ground.

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Answer Section

1 ANS:
{ }

REF: 010324siii

2 ANS:
{4, -4}

$$3x^2 = 48$$

$$3x^2 - 48 = 0$$

$$x^2 - 16 = 0$$

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

$$x = -4 \quad x = 4$$

REF: 010215a

3 ANS:
6

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

$$x^2 = 36$$

$$x^2 - 36 = 0$$

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

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

REF: 010808a

4 ANS:
-5 and 5

REF: 081403ai

5 ANS:
 $-\frac{5}{6}$

$$36x^2 = 25$$

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

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

REF: 011715ai

6 ANS:
 $3x - 1 = \pm 5$

REF: 061521ai

7 ANS:
 2 and -6
 $2(x+2)^2 = 32$
 $(x+2)^2 = 16$
 $x+2 = \pm 4$
 $x = -6, 2$

REF: 061619ai

8 ANS:
 $-3 \pm \sqrt{7}$

REF: 081523ai

9 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

10 ANS:
 $(x-3)^2 - 49 = 0$
 $(x-3)^2 = 49$
 $x-3 = \pm 7$
 $x = -4, 10$

REF: 081631ai

11 ANS:
 $\frac{1}{2}x^2 - 4 = 0$
 $x^2 - 8 = 0$
 $x^2 = 8$
 $x = \pm 2\sqrt{2}$

REF: fall1306ai

12 ANS:

$$H(1) - H(2) = -16(1)^2 + 144 - (-16(2)^2 + 144) = 128 - 80 = 48$$

$$-16t^2 = -144$$

$$t^2 = 9$$

$$t = 3$$

REF: 061633ai