CA Algebra 1 Standard 19.0

MULTIPLE CHOICE

1. Which of the following is the quadratic formula?

   A. $x = \dfrac{-b \pm \sqrt{b^2 + 4ac}}{2a}$

   B. $x = \dfrac{b \pm \sqrt{b^2 - 4ac}}{2a}$

   C. $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

   D. $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2}$

2. Jesse is solving this equation by completing the square.

   $ax^2 + bx + c = 0$ (where $a \geq 0$)

   Step 1: ?

   Which is Step 1 to the solution?

   A. $ax^2 + bx = -c$

   B. $\dfrac{ax^2 + bx + c}{2} = 0$

   C. $ax^2 + bx = c$

   D. $ax^2 + c = -bx$

3. Karina is solving this equation by completing the square.

   $ax^2 + bx + c = 0$ (where $a \geq 0$)

   Step 1: $ax^2 + bx = -c$
   Step 2: ?

   Which is Step 2 to the solution?

   A. $x^2 + bx = \dfrac{-c}{a}$

   B. $x^2 + \dfrac{bx}{a} = \dfrac{-c}{a}$

   C. $x^2 + \dfrac{bx}{a} = -c$

   D. $ax^2 + \dfrac{bx}{a} = \dfrac{-c}{a}$

4. Kira is solving the equation by completing the square.

$$ax^2 + bx + c = 0$$

Step 1: $ax^2 + bx = -c$

Step 2: $x^2 + \frac{bx}{a} = \frac{-c}{a}$

Step 3: $x^2 + \frac{bx}{a} + \left(\frac{b}{2a}\right)^2 = \frac{-c}{a} + \left(\frac{b}{2a}\right)^2$

Step 4: ?

Which is Step 4 to the solution?

A. $\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 2ac}{2a^2}$

B. $\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a}$

C. $\left(x + \frac{b}{a}\right)^2 = \frac{b^2 - 4ac}{2a^2}$

D. $\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$

5. Michael is solving the equation by completing the square.

$$ax^2 + bx = -c$$

Which must Michael do to find the expression to add to both sides of the equation?

A. Michael has to find like denominators of $2a$.

B. Michael has to square the quantity $\left(\frac{b}{2a}\right)$.

C. Michael has to add numerators together.

D. Michael has to remove $-c$.

6. Linda is solving the equation by completing the square.

$$ax^2 + bx + c = 0$$

Step 1: $ax^2 + bx = -c$

Step 2: $x^2 + \frac{bx}{a} = \frac{-c}{a}$

Step 3: $x^2 + \frac{bx}{a} + \left(\frac{b}{2a}\right)^2 = \frac{-c}{a} + \left(\frac{b}{2a}\right)^2$

Step 4: $\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$

What did Linda do to find the expression on the left side of the equal sign in Step 4?

A. Linda factored the left side because it is a perfect square trinomial.

B. Linda put parentheses around everything to make it look better.

C. Linda eliminated the middle term.

D. Linda squared every term on the left side.

7. Mark is solving the equation by completing the square.

$$ax^2 + bx + c = 0$$

Step 1: $ax^2 + bx = -c$

Step 2: $x^2 + \frac{bx}{a} = \frac{-c}{a}$

Step 3: $x^2 + \frac{bx}{a} + \left(\frac{b}{2a}\right)^2 = \frac{-c}{a} + \left(\frac{b}{2a}\right)^2$

Step 4: $\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$

Which is the next step Mark has to do?

A. Mark has to square both sides.
B. Mark has to square the left side only.
C. Mark has to take the square root of both sides.
D. Mark has to square the right side only.

8. Juan is solving the equation by completing the square.

$$ax^2 + bx + c = 0$$

Step 1: $ax^2 + bx = -c$

Step 2: $x^2 + \frac{bx}{a} = \frac{-c}{a}$

Step 3: $x^2 + \frac{bx}{a} + \left(\frac{b}{2a}\right)^2 = \frac{-c}{a} + \left(\frac{b}{2a}\right)^2$

Step 4: $\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$

Which is a step in solving this equation?

A. $x = \sqrt{\frac{b^2 - 4ac}{4a^2}} - \frac{b}{2a}$

B. $x = \sqrt{\frac{b^2 - 4ac}{4a^2}} - \frac{b}{2a}$

C. $x = \sqrt{\frac{b^2 - 4ac}{2a^2}} - \frac{b}{2a}$

D. $x = \sqrt{\frac{b^2 - 4ac}{4a^2}} - \frac{b^2}{2a}$

9. Joanie is solving the equation by completing the square.

$$ax^2 + bx + c = 0$$

Step 1: $ax^2 + bx = -c$

Step 2: $x^2 + \frac{bx}{a} = \frac{-c}{a}$

Step 3: $x^2 + \frac{bx}{a} + \left(\frac{b}{2a}\right)^2 = \frac{-c}{a} + \left(\frac{b}{2a}\right)^2$

Step 4: $\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$

Step 5: $x = \pm\sqrt{\frac{b^2 - 4ac}{4a^2}} - \frac{b}{2a}$

Step 6: $x = -\frac{b}{2a} \pm \frac{\sqrt{b^2 - 4ac}}{2a}$

What did Joanie do to simplify the equation from Step 5 to Step 6?

A. Joanie squared the denominator.
B. Joanie switched the terms around changing their places.
C. Joanie divided the denominator.
D. Joanie took the square root of $4a^2$ in the denominator.

10. The students in Mr. Cooper's class solved the equation $ax^2 + bx + c = 0$ by completing the square. They developed the quadratic formula.

Step 1: $ax^2 + bx = -c$

Step 2: $x^2 + \frac{bx}{a} = \frac{-c}{a}$

Step 3: $x^2 + \frac{bx}{a} + \left(\frac{b}{2a}\right)^2 = \frac{-c}{a} + \left(\frac{b}{2a}\right)^2$

Step 4: $\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$

Step 5: $x = \pm\sqrt{\frac{b^2 - 4ac}{4a^2}} - \frac{b}{2a}$

Step 6: $x = -\frac{b}{2a} \pm \frac{\sqrt{b^2 - 4ac}}{2a}$

Step 7: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

What did the class do from Step 6 to Step 7?

A. took away the 2*a* underneath the negative *b*
B. added the denominators
C. combined the right side of the equal sign because the terms had like denominators
D. subtracted the denominators