

1. Solve the equation by using the square root property.

$$x^2 = 16$$

$$x = \square$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex numbers in terms of i . Type an exact answer, using radicals as needed.)

2. Solve the equation by using the square root property.

$$3x^2 - 18 = 0$$

$$x = \square$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex numbers in terms of i . Type an exact answer, using radicals as needed.)

3. Solve the equation by using the square root property.

$$(x - 7)^2 = 18$$

$$x = \square$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex numbers in terms of i . Type an exact answer, using radicals as needed.)

4. Use the square root property to solve the equation.

$$(z + 3)^2 = 11$$

$$z = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed. Express complex numbers in terms of i . Use a comma to separate answers as needed.)

5. Solve the equation by using the square root property.

$$(2x + 1)^2 = 5$$

$$x = \square$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex numbers in terms of i . Type an exact answer, using radicals as needed.)

6. Solve the equation by using the square root property.

$$(9x - 4)^2 = 36$$

$$x = \boxed{}$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex numbers in terms of i . Type an exact answer, using radicals as needed.)

7. Solve the equation by using the square root property.

$$(2x + 5)^2 = 81$$

$$x = \boxed{}$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex numbers in terms of i . Type an exact answer, using radicals as needed.)

8. Complete the square for the expression and then factor the resulting perfect square trinomial.

$$x^2 + 14x$$

The factored perfect square trinomial is $\boxed{}$.

(Simplify your answer. Use integers or fractions for any numbers in the expression.)

9. Complete the square for the binomial and factor the resulting perfect square trinomial.

$$x^2 - 2x$$

Complete the square.

$\boxed{}$ (Type a trinomial.)

Factor the result.

$\boxed{}$ (Simplify your answer.)

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10. Add the proper constant to the binomial so that the resulting trinomial is a perfect square. Then factor the trinomial.

$$x^2 + 19x + \underline{\hspace{1cm}}$$

What is the constant term?

(Type an integer or a simplified fraction.)

What is the factored form of the trinomial?

(Use integers or fractions for any numbers in the expression.)

11. Find the perfect square trinomial whose first two terms are $x^2 - \frac{1}{4}x$, and then factor it.

The perfect square trinomial is $x^2 - \frac{1}{4}x + \frac{1}{\boxed{\hspace{1cm}}}$.

When factored, you get $\left(x - \frac{1}{\boxed{\hspace{1cm}}}\right)^2$.

12. Determine the constant that should be added to the binomial so that it becomes a perfect trinomial. Then write and factor the trinomial.

$$x^2 + \frac{3}{4}x$$

What is the constant that should be added to the binomial so that it becomes a perfect square trinomial?

(Type an integer or a simplified fraction.)

Write the perfect square trinomial.

(Do not factor. Use integers or fractions for any numbers in the expression.)

Factor the trinomial.

13. Solve the equation by completing the square.

$$x^2 + 10x + 13 = 0$$

$$x = \square$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex terms of i . Type an exact answer, using radicals as needed.)

14. Solve the equation by completing the square.

$$x^2 - 4x = 30$$

$$x = \square$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex terms of i . Type an exact answer, using radicals as needed.)

15. Solve the equation by completing the square.

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

$$x = \square$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex terms of i . Type an exact answer, using radicals as needed.)

16. Solve the equation by completing the square.

$$\frac{x^2}{2} + \frac{7}{2}x = 2$$

$$x = \square$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex terms of i . Type an exact answer, using radicals as needed.)

17. Solve the equation by completing the square.

$$2y^2 + 10y = -11$$

$$y = \square$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex terms of i . Type an exact answer, using radicals as needed.)

18. Solve the equation by any method.

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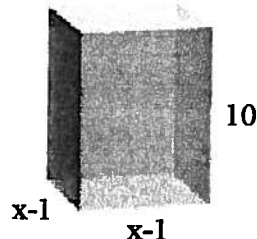
$$x^2 + 6x - 12 = 0$$

$$x = \square$$

(Simplify your answer. Use a comma to separate answers as needed. Express complex terms of i . Type an exact answer, using radicals as needed.)

- 19.

The sides of the box shown are labeled with the dimensions in feet. What is the value of x if the volume of the box is 490 cubic feet?



$$x = \square \text{ ft}$$

20. The time a basketball player spends in the air when shooting a basket is called the "hang time". The vertical leap L measured in feet is related to the hang time t measured in seconds by the equation $L = 4t^2$. Suppose that a basketball player has a vertical leap of 2 feet 8 inches. Find the hang time for this leap.

The hang time for a vertical leap of 2 feet 8 inches is $\square$ seconds.
(Round to two decimal places as needed.)