

Algebra II: Chapter 4 Review (4.5-4.8) - Calculator

1. Solve by factoring.

$$x^2 + 8x = -15$$

2. Solve by factoring.

$$5x^2 - 49x + 72 = 0$$

3. Solve by taking square roots.

$$4x^2 = 20$$

4. Solve by taking square roots.

$$8x^2 = 98$$

5. The function $y = -16t^2 + 398$ models the height y in feet of a stone t seconds after it is dropped from the edge of a vertical cliff. How long will it take the stone to hit the ground? Round to the nearest hundredth of a second.

6. State the value that completes the square for the expression:

$$x^2 + 14x$$

7. A landscaper is designing a flower garden in the shape of a trapezoid. She wants the length of the shorter base to be 3 yards greater than the height, and the length of the longer base to be 5 yards greater than the height. For what height will the garden have an area of 275 square yards? Round to the nearest tenth of a yard.

8. State the value that completes the square for the expression:

$$x^2 + 17x$$

9. Solve the quadratic equation by completing the square:

$$x^2 + 16x + 54 = 0$$

10. Solve the quadratic equation by completing the square:

$$x^2 + 14x = -24$$

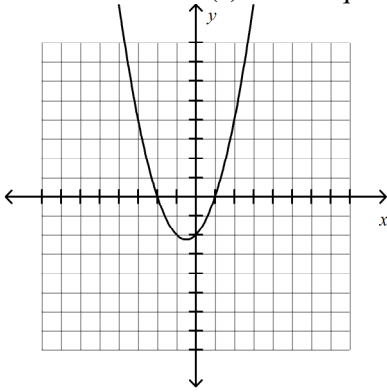
11. Rewrite the equation in vertex form. State the vertex and y-intercept.

$$y = x^2 - 12x + 26$$

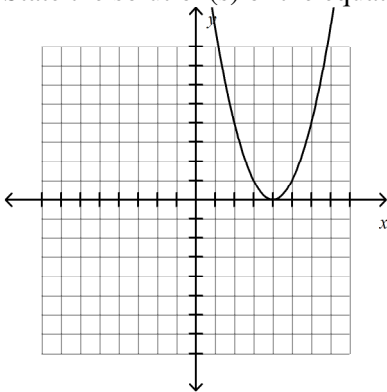
12. Use the quadratic formula to solve the equation:

$$2x^2 + x - 7 = 0$$

13. State the solution(s) of the equation of the graph.



14. State the solution(s) of the equation of the graph.



15. Simplify:

$$\sqrt{-121}$$

16. Simplify:

$$\sqrt{-125}$$

17. Simplify:

$$(2 + 2i) + (-1 + i)$$

18. Simplify:

$$(2 + 2i) - (1 - 2i)$$

19. Simplify:

$$(-i)(-2i)$$

20. Multiply and simplify:

$$(4 - 5i)(2 + 6i)$$

21. Rationalize the denominator and simplify:

$$\frac{3 + 4i}{5i}$$

22. Rationalize the denominator and simplify:

$$\frac{4 - 2i}{-3 - 2i}$$

23. Find the solutions of the equation.

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

24. Find the solutions of the equation.

$$x^2 + 49 = 0$$

25. Find the solutions of the equation.

$$x^3 - 2x^2 + 7x - 14 = 0$$