1. Solve: $|2x + 5| = 15$

2. Solve the inequality. Then graph your solution.
$|3x-2| \le 5$

3. Solve the linear system:
$3x-2y = 3$
$-x+y = 0$

4. Solve the system.
4x - 2y = -2
y = 2x + 1

5. Solve the linear system:
$3x+2y = 21$
y = 1 - 2x

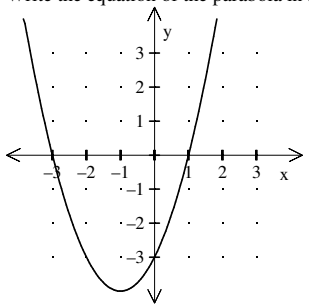
6. Graph the system of linear inequalities.
$y \le -x+4$
$y \le 2x+4$
$y \ge -2$

7. Describe how the graph $y = x^2$ translates to form the graph $y = -\frac{2}{3}(x-4)^2+2$.

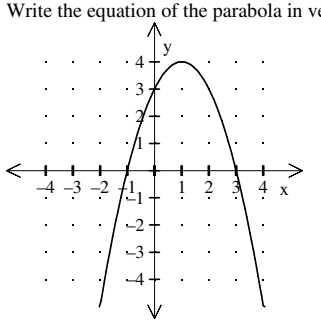
8. Find the y-intercept of the graph $y = x^2 - 3x - 6$.

9. Solve the system:
$5x - y - 4z = -3$
$2x - 2y - z = -12$
$x - 2y - 3z = -7$

10. Write the equation of the parabola in standard form.



11. Write the equation of the parabola in vertex form.



12. Find the *vertex* and the *axis of symmetry* of the parabola.
$y = -3x^2 + 12x - 8$

13. Find the *vertex* of the parabola and determine if it opens *up* or *down*.
$y = 7 - 8x - 2x^2$

14. Find the axis of symmetry and the *x*-intercepts of the parabola.
$y = -3x^2 + 6x$

Factor the expression:

15. $x^2 + 10x + 25$

16. $x^2 - 81$

17. $3x^2 - 11x - 6$

18. Solve by factoring:
$x^2 - 18x + 81 = 0$

19. Find the zeros of the equation. $x^2 - x - 20 = y$

20. Solve the equation by completing the square.
$x^2 + 2x - 35 = 0$

21. Solve by completing the square: $x^2 - 12x = 0$

22. Solve by the quadratic formula: $3x^2 + 4x - 4 = 0$

23. Find the missing factor: (3 + 6i)(?) = 45

24. Plot the number in a complex plane. $-3-8i$

Write the expression as a complex number in standard form.

25. $(-2-7i) - (3+8i)$

26. $3i(6-5i)$

27. $(2+3i)(1-4i)$

28. $\frac{5}{1+i}$

29. Add: $(3x - x^2) + (3x^2 + 2)$

30. Subtract:
$(3x^5 + 2x) - (-7x + 6 + x^5)$

31. Multiply: $(x-1)(x^2 - 3x + 4)$

32. Perform the indicated operations. $(2x-5)^3$

33. Let $f(x) = 4 - x^2$ and $g(x) = 2 - x$. Find $f(x) - g(x)$.

34. Let $f(x) = 1 - x^2$ and $g(x) = 1 - x$. Find $f(x) + g(x)$.

35. Let $f(x) = 16 - x^2$ and $g(x) = 4 - x$. Find $f(g(x))$.

36. Let $f(x) = 2x - x^2$ and $g(x) = 1 - x$. Find $f(3)$ *and* $g(-4)$.

37. Let $f(x) = 1 - x^2$ and $g(x) = 1 - x$. Find $f(x) \bullet g(x)$.

38. Let $f(x) = 2x - x^2$ and $g(x) = 2 - 5x$. Find $g^{-1}(x)$

Factor:

39. $x^3 + 125$

40. $24x^4 - 3x$

41. Use long division:
$(6x^4 + 20x^2 - 4) \div (x^2 + 3)$

42. Use the Remainder Theorem to find the remainder of this polynomial division problem:
$(2x^3 + 9x^2 + 3x - 6) \div (x + 4)$