Show work on a separate piece of paper!!!

We have a final exam coming up... Let's not forget tings we've learned so far!

Simplify the expression.

2. $8(e - 1) + 2(e - 1)$

   a. $10e - 10$ c. $8e - 10$

   b. $8e - 6$ d. $10e - 6$

3. $-3(w - 2) = 25 - 4w$

   a.   -31   c.   31

   b.   -19   d.   19

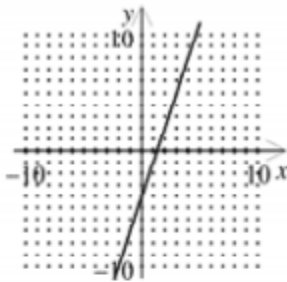4. Solve for n: $-5m - n = m + 7n$

   a. $n = \dfrac{6m + n}{7}$ c. $n = -\dfrac{4}{3}m$

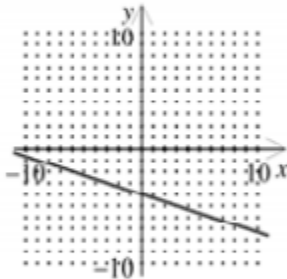   b. $n = -\dfrac{3}{4}m$ d. $n = -\dfrac{n + 5m}{5}$
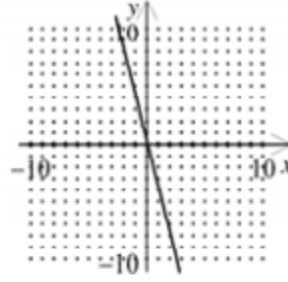
10. Graph $f(x) = \dfrac{1}{3}x - 4$.

   a.

   c.
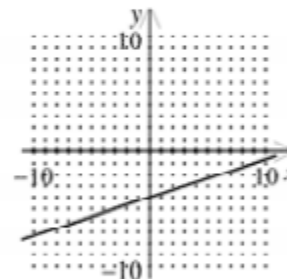

   b.

   d.

11. Find the slope of the line passing through the points $(-7, -1)$ and $(-6, 5)$.
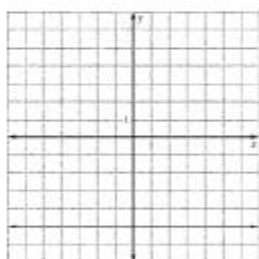
   a.   6   c. $\dfrac{1}{6}$

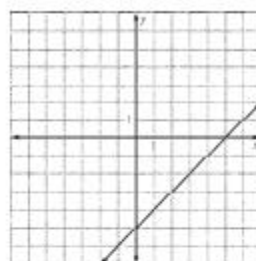   b. $-\dfrac{4}{13}$ d. $-\dfrac{13}{4}$

Graph the equation.
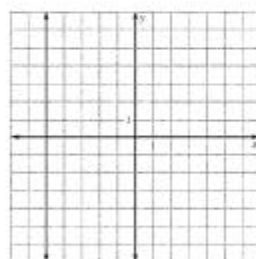
12. $x = -5$

    a.   none of these

    c.

    b.

    d.

13. Find the x- and y-intercepts of $y = -4x - 5$.
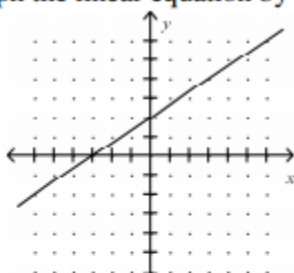
    a. x-intercept: -4; y-intercept: -5

    c. x-intercept: $-\dfrac{5}{4}$; y-intercept: -5

    b. x-intercept: -5; y-intercept: -4

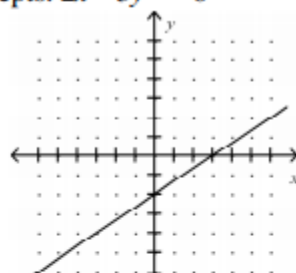   d. x-intercept: -5; y-intercept: $-\dfrac{5}{4}$

14. Graph the linear equation by finding x- and y-intercepts. $2x - 3y = -6$
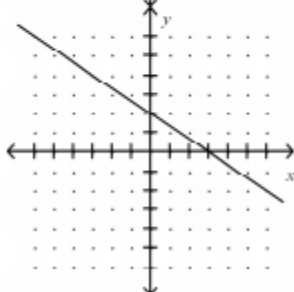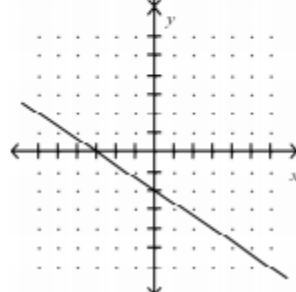
    a.

    c.

    b.

    d.

18. Write the standard form of the equation of the line that has slope −2 and passes through the point $(6, 2)$.
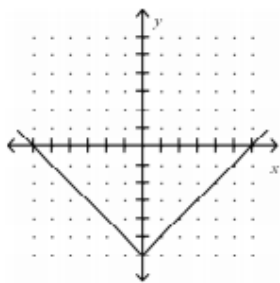
    a. $-2x + y = -14$ c. $2x + y = 14$

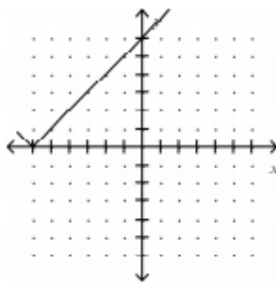   b. $x - 2y = -10$ d. $-x + 2y = 10$
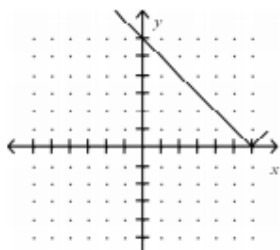
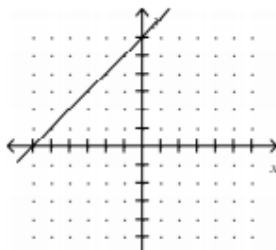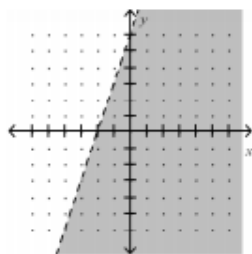19. Graph the function defined by $y = |x - 6|$.
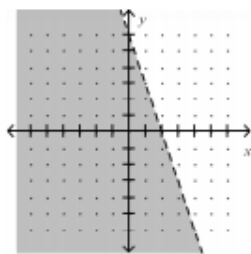
    a.

    c.
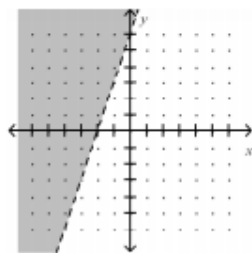
    b.

    d.

20. $6x - 2y < -12$

    a.

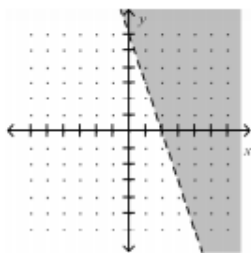   c.

    b.

    d.

21. A rental car agency charges $17 per day plus 7 cents per mile to rent a certain car. Another agency charges $22 per day plus 5 cents per mile to rent the same car. How many miles per day will have to be driven for the cost of a car from the first agency to equal the cost of a car from the second agency?

    a.   195 miles per day   c.   1950 miles per day

    b.   2500 miles per day   d.   250 miles per day

Solve the linear system.

22. $-3x - 4y = 8$
$-2x - 2y = 6$

    a. $(-4, 1)$ d.   no solution

    b. $(-5, 5)$ e.   infinitely many solutions

    c. $(-3, 2)$

23. $-3x - 3y = -4$
    $y = -x + 1$
    a. $(4, -4)$
    b. $(-5, -5)$
    c. $(2, -5)$

    d. no solution
    e. infinitely many solutions

24. Mr. Frankel bought 5 tickets to a puppet show and spent $22. He bought a combination of child tickets for $2 each and adult tickets for $8 each. Which system of equations below will determine the number of adult tickets, a, and the number of child tickets, c, he bought?

    a. $8a + 2c = 22$
       $a + c = 5$

    b. $a = c - 8$
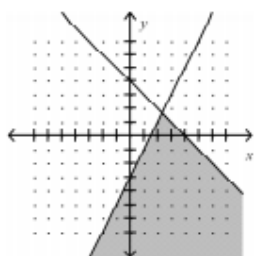 $8a + 2c = 22$

    c. $2a + 2c = 27$
       $a + c = 5$

    d. $a + c = 110$
       $a + c = 5$

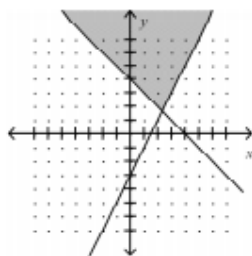**Graph the system of inequalities.**
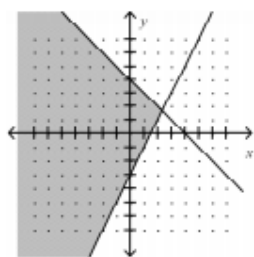
25. $y \leq -x + 4$
    $y \geq 2x - 3$
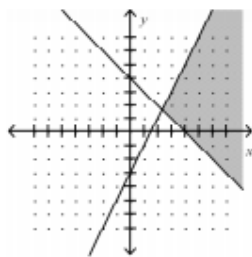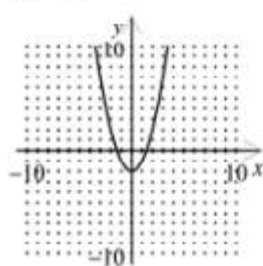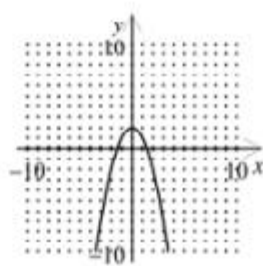
    a.

    c.

    b.

    d.

Graph.

27. $y = -x^2 - 2$

    a.

    c.

    b.

    d.

Graph.

28. $y = (x+2)^2 - 5$

a.

c.

b.

d.
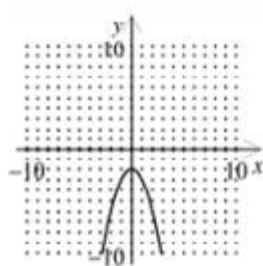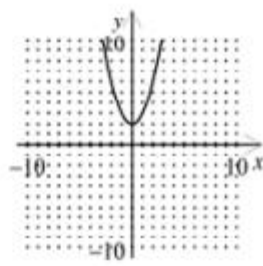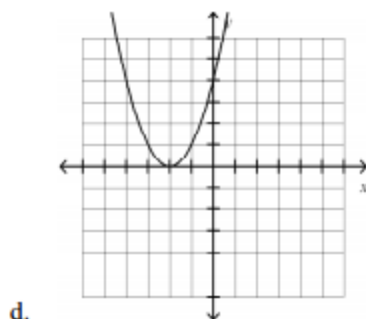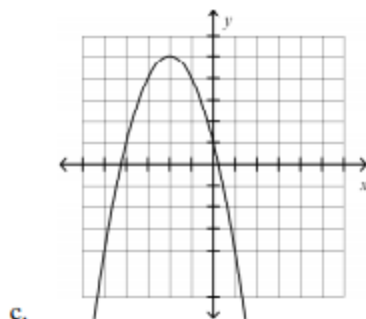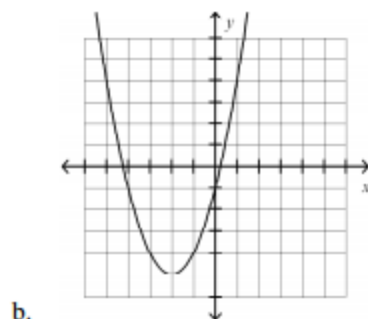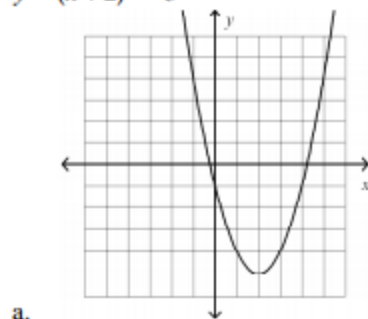
29. Graph the function. Label the vertex, axis of symmetry, and x-intercepts.

$y = -3(x-4)(x-2)$

a.

vertex: $(3, -3)$
axis of symm: $x = 3$
x-intercepts: 2, 4

c.

vertex: $(3, 3)$
axis of symm: $x = 3$
x-intercepts: 2, 4

b.

vertex: $(-3, 3)$
axis of symm: $x = -3$
x-intercepts: $-4, -2$

d.

vertex: $(-3, -3)$
axis of symm: $x = -3$
x-intercepts: $-4, -2$

Write in standard form.

30. $y = -(x-2)^2 - 2$

    a. $y = -x^2 - 4x + 6$ c. $y = -x^2 + 4x - 6$

    b. $y = -x^2 + 4x + 6$ d. $y = -x^2 - 4x - 6$

31. Write as the product of two factors: $2x^2 + x - 15$

    a. $(2x+5)(x-3)$ c. $(2x+3)(x-5)$
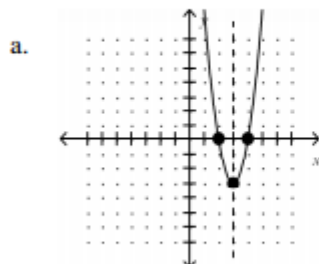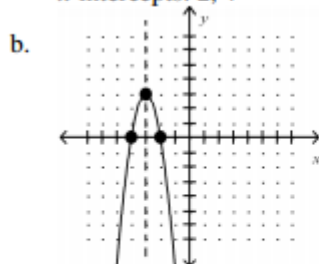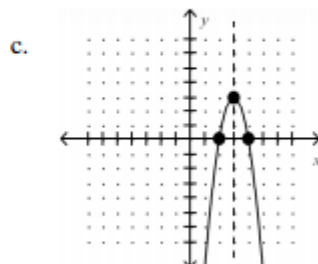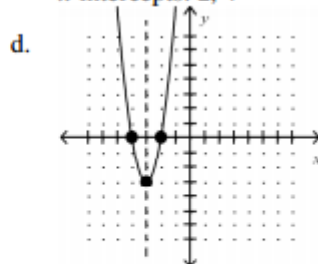
    b. $(2x-5)(x+3)$ d. $(2x-3)(x+5)$

32. Name one factor of the expression: $14x^2 - 5x - 6$

    a. $(2x-6)$ c. $(7x+6)$

    b. $(2x+6)$ d. $(7x-6)$

33. Factor the expression: $16x^2 - 25$

    a. $(4x+5)(4x-5)$ c. $(4x-5)(4x-5)$

    b. $(16x+1)(x-25)$ d. $(16x-1)(x+25)$

Solve.

34. $x^2 - 9x = 0$

    a. $-9, 9$ c. $0, -9$

    b. $0, 9$ d. $1, 9$

35. $40x^2 - 76x + 28 = 0$

    a. $-\dfrac{1}{2}, \dfrac{7}{5}$ c. $\dfrac{4}{5}, \dfrac{7}{8}$

    b. $\dfrac{1}{2}, \dfrac{7}{5}$ d. $-\dfrac{4}{5}, \dfrac{7}{8}$

Factor completely.

36. $24u^5 + 66u^4 + 45u^3$

    a. $3u^3(2u+5)(4u+3)$ c. $u^3(4u+5)(2u+3)$

    b. $u^3(2u-5)(4u+3)$ d. $3u^3(4u+5)(2u+3)$

Solve.

39. $4(x-5)^2 + 28 = 112$

    a. $-84 \pm \sqrt{7}$ c. $5 \pm \sqrt{21}$

    b. $84 \pm \sqrt{7}$ d. $-5 \pm \sqrt{21}$

Write the expression as a complex number in standard form.

40. $(7+9i)-(-2-3i)$
    a. $5+12i$ c. $9-12i$
    b. $9+12i$ d. $5-12i$

Solve.

44. $x^2+4x+20=0$
    a. $2+8i,\ 2-8i$ c. $-2+8i,\ -2-8i$
    b. $2+4i,\ 2-4i$ d. $-2+4i,\ -2-4i$

Write the equation in vertex form: $y=a(x-h)^2+k$.

46. $y=x^2+2x+4$
    a. $y=(x+1)^2+3$ c. $y=(x-1)^2+4$

    b. $y=(x+1)^2+4$ d. $y=(x-1)^2+3$

Find the maximum value of the quadratic equation.

47. $y=-3x^2-18x-42$
    a.   max $=-3$ c.   max $=-15$
    b.   max $=-63$ d.   max $=-42$