

**SUMMER ASSIGNMENT****Solve each equation.**

1)  $214 = 4 - 5(8n + 6)$

2)  $-6(4n - 2) - 6n = 162$

3)  $7(5 + 5k) = 140$

4)  $248 = 8(1 + 6k)$

**Solve each equation for the indicated variable.**

5)  $ca = r - d$ , for  $a$

6)  $x + k = v + w$ , for  $x$

**Solve each equation by factoring.**

7)  $x^2 = -8x - 15$

8)  $x^2 + 40 = 13x$

9)  $k^2 + 7 = 8k$

10)  $r^2 - 3r = 10$

**Solve each equation with the quadratic formula.**

11)  $2m^2 - 70 = 4m$

12)  $12m^2 + 11m = 4$

**Evaluate each using the values given.**

13)  $q(r + r)$ ; use  $q = 3$ , and  $r = 6$

14)  $x + 4 + y$ ; use  $x = 4$ , and  $y = 2$

**Solve each equation. Remember to check for extraneous solutions.**

15)  $11 = 10 + \sqrt{\frac{a}{8}}$

16)  $13 = 10 + \sqrt{\frac{m}{2}}$

17)  $1 = \frac{1}{5m} + \frac{1}{5}$

18)  $\frac{1}{v} = \frac{1}{4v^2 + 4v} + \frac{v - 1}{2v^2 + 2v}$

19)  $\frac{3v - 18}{4v} = 3 - \frac{v + 2}{4v}$

20)  $5 \times (-4) + (-4)^2$

21)  $-\frac{4}{(-8) - (4 - 10)}$

**Simplify. Your answer should contain only positive exponents.**

22)  $x^2 y^2 \cdot y$

23)  $u^2 v^2 \cdot u^2 v^4$

24)  $2yx^4 \cdot xy$

25)  $4b^3 \cdot 2ab^2$

**Factor the common factor out of each expression.**

26)  $35x^4 - 21x^3 + 14x$

27)  $18v^4 - 12v - 18$

**Factor each completely.**

28)  $n^2 + 4n - 5$

29)  $x^2 - 16x + 64$

30)  $5m^2 + 35m - 40$

31)  $a^2 + 8a$

32)  $9n^2 - 4$

33)  $9m^2 - 24m + 16$

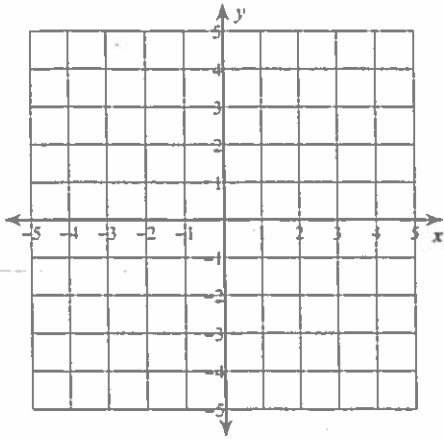
**Solve each system by graphing.**

34)  $y = -\frac{7}{4}x - 3$   
 $y = -\frac{1}{4}x + 3$

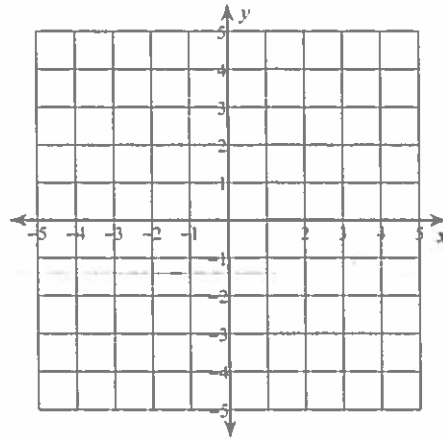
35)  $y = -3x + 4$   
 $y = -\frac{1}{2}x - 1$

Sketch the solution to each system of inequalities.

36)  $y \leq 5x + 3$   
 $y \geq 5x - 3$



37)  $y \geq 4x + 1$   
 $y > x - 2$



Find each product.

38)  $(4n - 6)(4n + 8)$

39)  $(5n + 5)(8n - 1)$

Simplify.

40)  $\sqrt{2}(5\sqrt{2} + 3)$

41)  $\sqrt{2}(\sqrt{6} + 4)$

42)  $-5\sqrt{10}(\sqrt{10} + 2)$

Simplify each expression.

43)  $\frac{9}{b^2 + 7b + 12} \cdot \frac{b^2 + 6b + 8}{9}$

44)  $\frac{x^2 + 12x + 20}{x + 10} \cdot \frac{6}{x + 2}$

45)  $\frac{1}{n + 2} \cdot \frac{n^2 + 4n + 4}{n - 6}$

46)  $(2m^3 - 3m - 7m^4) + (2m - 6m^3 - m^4)$

47)  $(7x^4 - 1 - 2x^3) + (5x^4 - 8x^3 - 8)$

48)  $(2x^4 + x^2 + 2) - (x^4 + 2 + 4x^2)$

**Simplify.**

49)  $-3\sqrt{3} - \sqrt{6} + 2\sqrt{12}$

50)  $-2\sqrt{20} - \sqrt{3} - 2\sqrt{45}$

51)  $(-\sqrt{3} + \sqrt{5})(5\sqrt{3} + \sqrt{5})$

52)  $(\sqrt{2} + \sqrt{3})(-\sqrt{2} + \sqrt{2})$

53)  $\sqrt{320u^2v}$

54)  $\sqrt{448a^3b^2}$

55)  $\sqrt{256x^3y^4}$

56)  $\sqrt{108mn^2}$

**Solve each system by graphing.**

57)  $y = -2x - 1$

$$y = \frac{1}{2}x + 4$$

**Solve each system by substitution.**

58)  $6x - 4y = 12$

$$-x + y = -4$$

59)  $-3x - 2y = 2$

$$x + 8y = -8$$

**Solve each system by elimination.**

60)  $-5x + 6y = -8$

$$-6x + 12y = -24$$

61)  $8x + 4y = -12$

$$-4x - 7y = -19$$

62)  $x + 2y = -12$

$$7x + 8y = -24$$

63) Jose and Jill each improved their yards by planting hostas and ornamental grass. They bought their supplies from the same store. Jose spent \$170 on 10 hostas and 12 bunches of ornamental grass. Jill spent \$97 on 7 hostas and 4 bunches of ornamental grass. Find the cost of one hosta and the cost of one bunch of ornamental grass.

64) Amanda and Jaidee are selling fruit for a school fundraiser. Customers can buy small boxes of tangerines and large boxes of tangerines. Amanda sold 6 small boxes of tangerines and 4 large boxes of tangerines for a total of \$100. Jaidee sold 1 small box of tangerines and 2 large boxes of tangerines for a total of \$38. What is the cost each of one small box of tangerines and one large box of tangerines?

- 65) Ryan's school is selling tickets to a play. On the first day of ticket sales the school sold 7 adult tickets and 11 child tickets for a total of \$207. The school took in \$294 on the second day by selling 14 adult tickets and 14 child tickets. Find the price of an adult ticket and the price of a child ticket.