

For students who have completed Algebra 1

Equations

- Evaluating expressions
- Solving multi-step equations
- Solving systems of linear equations
- Writing equations
- Graphing linear equations

Inequalities

- Solving multi-step
- Solving absolute value
- Graphing systems of linear inequalities

Exponents

- Simplifying

Radicals

- Simplifying
- Add, subtract, multiply, divide
- Solving equations

Polynomials

- Factoring
- Simplifying rational expressions
- Solving rational equations
- Graphing quadratic equations

Expressions.

Find the value of each expression if $a = 6$, $b = 3$, $c = -7$, and $d = -2$. Leave any fractional answers as improper fractions.

1. $a + b \cdot c =$

2. $a - b \cdot c =$

3. $a - b + c \cdot d =$

4. $a + b \cdot d =$

5. $a(b + c) - a \cdot d =$

6. $a[(b - c) + a(d)] =$

7. $a(c + d) - c \cdot d =$

8. $a[(b - c) + d(a)] =$

9. $-a[(b - c) - d(a \cdot c)] =$

10. $-a - (b + c) + (-d) \cdot a =$

11. $\frac{a + b}{c + d} =$

12. $\frac{a - c}{b - d} =$

13. $a \cdot \frac{b}{c} \cdot d^2 =$

14. $-d + c \cdot -b =$

15. $a^2 + a \div c \cdot 3 =$

16. $40 \cdot (b - d) =$

17. $15 \div b \cdot 3 =$

18. $72 \div (b^2 \cdot (d \div 2)) \div 2 =$

19. $d[5 + (13 - (b + c)) \div 3] =$

20. $a(b \cdot c) - a \div d =$

21. $d[(b - c) + (-c \cdot 3)] =$

22. $-d[(c - b) - a(-c \cdot -d)] =$

23. $a(a \div (-2)) - 8 \div d^2 =$

24. $d \cdot \frac{a + b}{c} \div d^2 =$

25. $\frac{b}{c} - b \div a^2 =$

Equations

Solve the equation. Write any fractional answers as improper fractions.

1. $\frac{4}{3}x - 6 = \frac{7}{3}x + 8$ _____

2. $7(y-3) - 2 = 3(2y-5) + 4$ _____

3. $\frac{4}{7}h + 5 = \frac{2}{7}h - 3$ _____

4. $4(2x-1) - 3 = 5(x-5)$ _____

5. $\frac{(d-5)}{7} = -2$ _____

6. $2g - 54 = -g + 21$ _____

7. $25c + 17 = 5c - 143$ _____

8. $4\frac{(x-2)}{2} = 0.5(4x-8)$ _____

9. $3 + 2(z+1) = 6 + 3z$ _____

10. $9[p + 2(p-2)] = 45$ _____

11. $\frac{a-6}{12} = \frac{a-2}{4}$ _____

12. $2a - 1 = 3.5a - 3$ _____

13. $\frac{3}{4}a + 16 = 2 - \frac{1}{8}a$ _____

14. $-8j + 5 = 4(11 - 2j)$ _____

15. $\frac{4}{7}y - 8 = \frac{2}{7}y + 10$ _____

16. $10(2-g) - 5(1-3g) = 30$ _____

17. $|13 - (k+2)| = 1$ _____

18. $\left|\frac{2-d}{3}\right| = 21$ _____

19. $|2x-1| = 3x+4$ _____

20. $-5b - 15(1-2b) + 30(b-2) = 60$ _____

21. $6a - 3(2a-3) + 9(3-a) = 12$ _____

22. $3.2y - \frac{1}{2}[7 - (4-5y)] = 0.6(2y+2)$ _____

23. $0.73x - 0.3(0.15 - 0.3x) = -5.785$ _____

24. $0.31g - 0.1(0.02 - 0.2g) = 0.064$ _____

25. $A = 2\pi r^2 + 2\pi rh$ (solve for h) _____

26. $L = C_l \frac{1}{2} \rho V^2 S$ (solve for S) _____

27. $G = 3(t-r)$ (solve for r) _____

28. $C = \frac{5}{9}(F-32)$ (solve for F) _____

29. $A = \frac{1}{2}h(b_1 + b_2)$ (solve for b_2) _____

30. $a = \sqrt{\gamma RT}$ (solve for R) _____

Equations - Systems

Solve each system by the method of your choice. Write any fractional answers as improper fractions.

1. $x + y = 8$
 $x - y = 4$

2. $2x - 3y = 13$
 $x - 2y = 8$

3. $2x + y = 6$
 $y = 8 - 2x$

4. $3x - y = 6$
 $2y = 6x - 12$

5. $m - 2n = 3$
 $5m + 4n = 8$

6. $\frac{x}{2} - y = 1$
 $x + y = 7$

7. $\frac{x}{3} + \frac{y}{3} = 2$
 $2x + 3y = 10$

8. $\frac{x}{2} + \frac{y}{2} = 7$
 $3x + 2y = 48$

9. $4r - 5t = 26$
 $\frac{r}{3} + \frac{t}{5} = \frac{14}{15}$

10. $\frac{x}{6} + \frac{y}{4} = \frac{3}{2}$
 $\frac{2x}{3} - \frac{y}{2} = 0$

11. $x - y = 1$
 $y = 2x - 3$

12. $x + y = 2$
 $3x - 2y = -9$

13. $2x + y = 0$
 $y = \frac{x}{3}$

14. $2x - y = -1$
 $3x = y + 2$

15. $\frac{x}{3} - \frac{y}{2} = 6$
 $\frac{x}{2} + \frac{y}{8} = 2$

16. $5x = 4y - 7$
 $8y = 6x + 2$

17. $6a - 7b = 10$
 $4a + 7b = 5$

18. $3x + 2y = 10$
 $x - 2y = 14$

19. $-\frac{2}{3}y + 2x = -1$
 $\frac{1}{3}y + x = \frac{1}{2}$

20. $\frac{1}{3}x = -\frac{1}{3}y + 4$
 $\frac{8}{3} = x + \frac{1}{3}y$

21. $\frac{m}{15} + \frac{n}{5} = \frac{2}{3}$
 $\frac{m}{2} - n = 0$

26. $\frac{3m-3}{2} + \frac{2n+5}{3} = 1$
 $2m - n = 3$

22. $4a + 3b = -24$
 $5a - 2b = -7$

27. $\frac{2p+3}{3} - \frac{3h-2}{2} = -2$
 $2p - 3h = -6$

23. $7a - 3b = -9$
 $9b - 4a = -24$

28. $x = 2z + 14$
 $y = 3z + 15$
 $2x - 3 = 3y - z$

24. $2a + 5b = 6$
 $3a = 10b + 2$

29. $x = 2z - 9$
 $y = z - 1$
 $x - 2y - 3z = 5$

25. $8x - 4y = 16$
 $4x + 5y = 22$

30. $x = 3$
 $y = 2x - 1$
 $x + y + z = 0$

Equations - writing equations

Write an equation in point-slope form.

1. $m = -2$
 $b = 4$

3. $P(-3, -2)$
 $Q(5, 2)$

2. $m = \frac{2}{3}$
 $P(3, 6)$

4. Parallel to $y = 2x - 1$,
through $P(1, -2)$.

Write an equation in standard form through the point with the given slope.

5. $P(-2, -4)$
 $m = 3$

7. $V(0, 3)$
 $m = -\frac{1}{2}$

6. $R(-4, -1)$
 $m = 1$

8. $V(-3, 0)$
 $m = -\frac{2}{3}$

Write an equation in slope-intercept form through the points.

9. $R(5,6)$
 $S(6,9)$

10. $C(2,0)$
 $D(-2,8)$

Write an equation in standard form through the points.

11. $E(7,2)$
 $F(-2,2)$

12. $S(-1, -1\frac{1}{2})$
 $T(0,3)$

Write an equation of a line in standard form with the given characteristics.

13. The line is parallel to the graph of $y = 3x - 2$ and contains $P(2, -3)$.

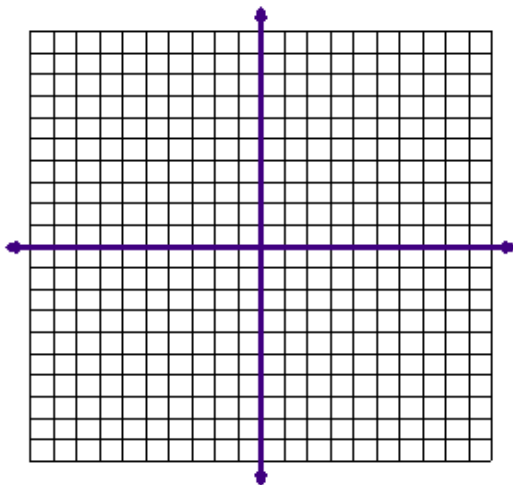
14. The line is parallel to the graph of $2x + 5y = 3$ and the x-intercept is -2.

15. The y-intercept of the line is $-\frac{1}{2}$ and it is parallel to the graph of $-3x + y - 4 = 0$.

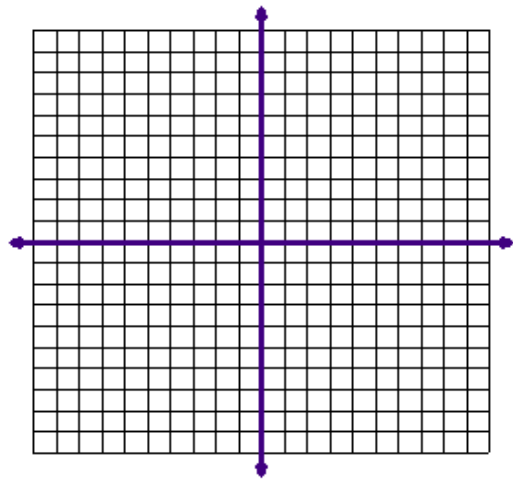
16. The line passes through $N(2, -5)$ and is perpendicular to the graph of $y = -2x + 4$.

Graphing linear equations

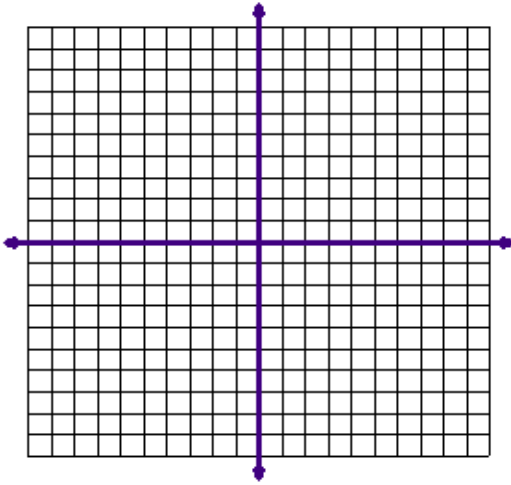
Graph the functions as shown.



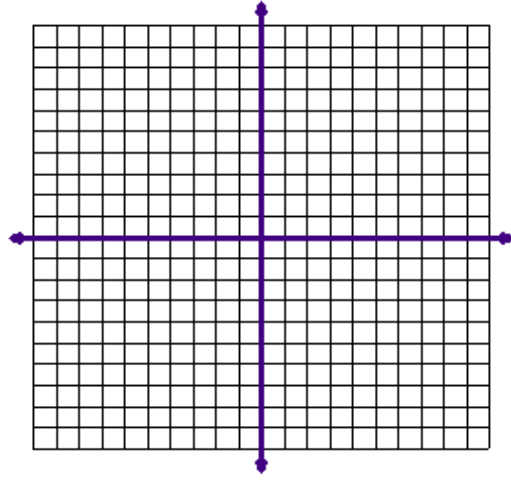
$g(x) = x + 5$ and $h(x) = -x - 5$



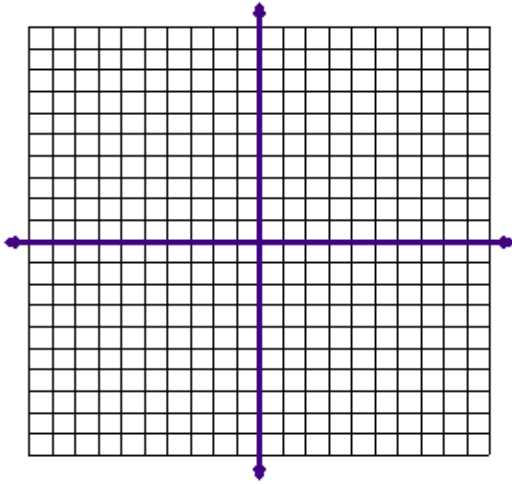
$f(x) = 2x - 6$ and $h(x) = -2x + 6$



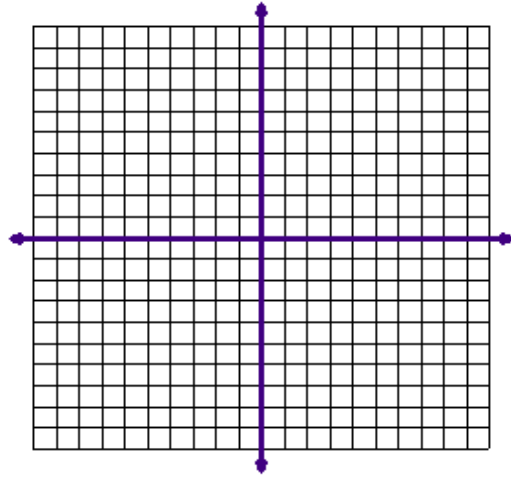
$$y = \frac{1}{2}x - 3 \quad \text{and} \quad h(x) = -\frac{1}{2}x - 3$$



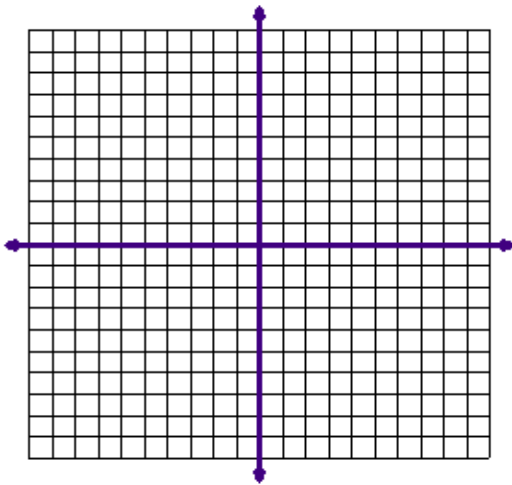
$$y = \frac{2}{3}x - 7 \quad \text{and} \quad 4x - 6y = -24$$



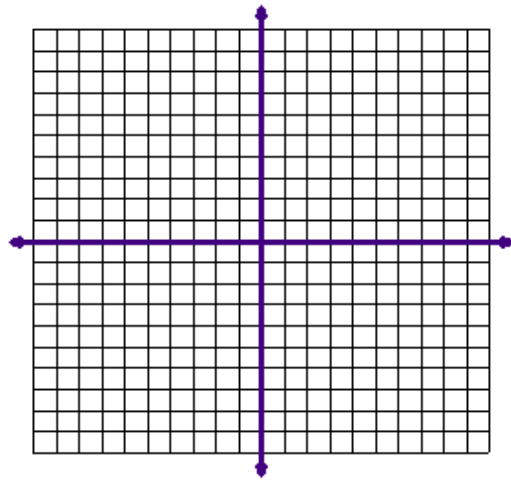
$$3x - y + 4 = 0 \quad \text{and} \quad 6x - 2y - 1 = 0$$



$$h(x) = 5x - 9$$



$$-3x + y + 4 = 0 \quad \text{and} \quad 2x - 2y - 1 = 0$$



$$h(x) = \frac{1}{2}x - \frac{4}{5}$$

Inequalities.

Solve the inequality and graph.

1. $2y + 7 \leq -21$ _____ 

2. $3k - (-6) > -33$ _____ 

3. $4(3m - 1) \geq 2(m + 3)$ _____ 

4. $\frac{1}{2}(3 - 8x) > 20\left(1 - \frac{1}{5}x\right)$ _____ 

5. $\frac{1}{2} - \frac{1}{3}y < \frac{3}{8} + \frac{1}{6}y$ _____ 

6. $8m - (3 - m) \leq -\{-[-(3 - 9m)]\}$ _____ 

7. $-2\{-2[-2(2 - z)]\} > -16 + 8z$ _____ 

8. $m > 34$ and $m < 35$ _____ 

9. $1 < 3a + 1 < 8$ _____ 

10. $-4 \leq -4x - 8 \leq 8$ _____ 

11. $a \leq -4$ or $a > 4$ _____ 

12. $3(m - 3) > -3$ or $-8m > -24$ _____ 

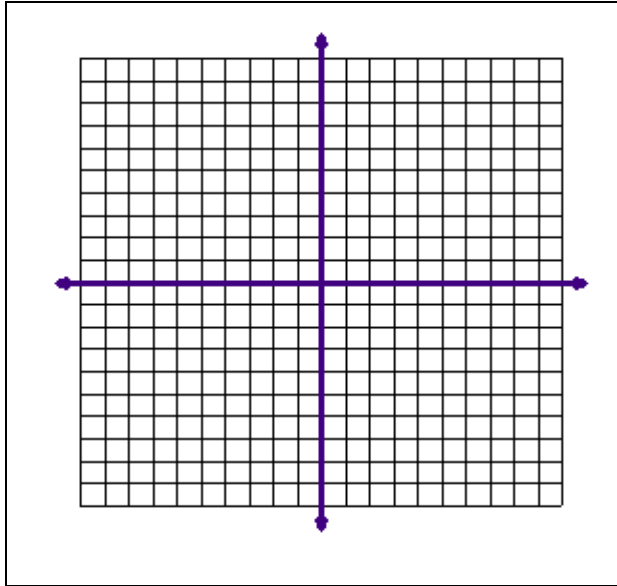
13. $-6 + |2x + 5(1 - x)| \leq -2$ _____ 

14. $|3g - 5| + 8 > 7$ _____ 

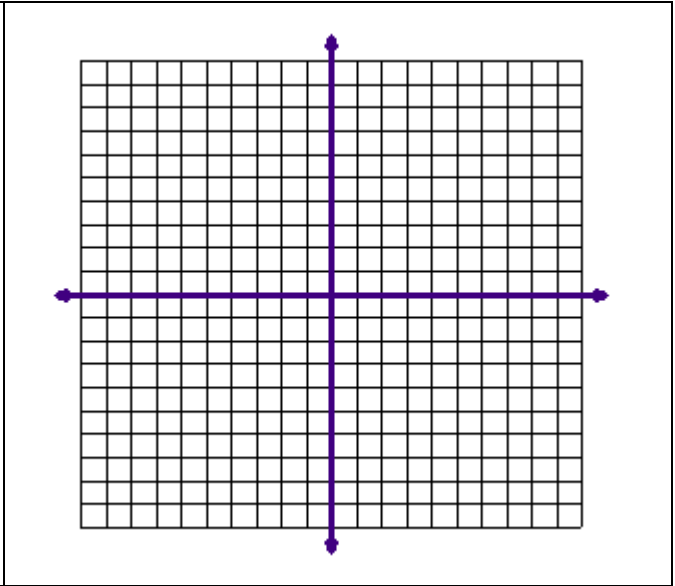
15. $|3k - 2| \leq 2k - 3$ _____ 

Graphing Systems of Linear Inequalities

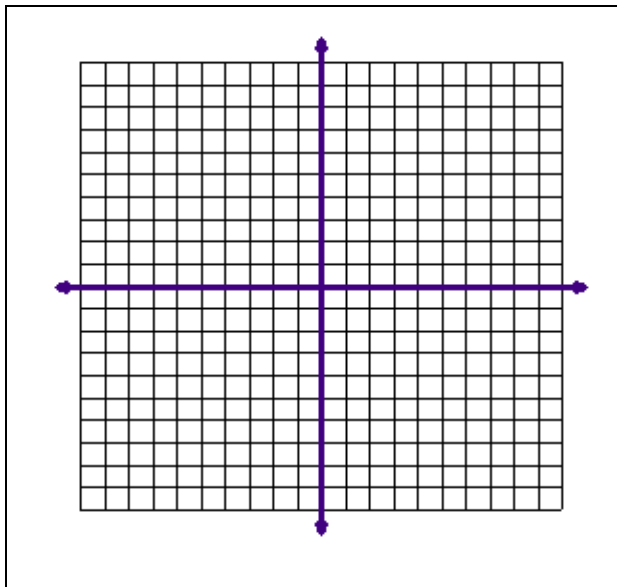
Graph the system of linear inequalities and indicate the solution by shading.



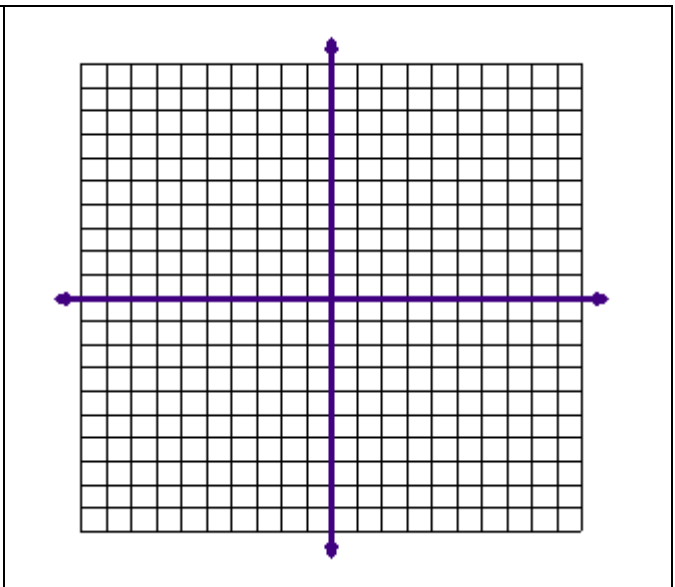
$$\begin{aligned}x + y &> 2 \\ 2x - y &\leq 1\end{aligned}$$



$$\begin{aligned}3 < 2x - y \\ x - 3y &\leq 4\end{aligned}$$



$$\begin{aligned}4x + 5 &> y \\ x - 4 &\leq 2y \\ 4y &\leq -5x + 20\end{aligned}$$



$$\begin{aligned}y &\geq -3 \\ y &< -x + 1 \\ y &< 8x + 37\end{aligned}$$

Exponents.

Simplify. Write your answer as a fraction in simplest form.

1. $\frac{36mk^2}{81m^2k}$ _____

2. $\frac{x^2y^3}{xy}$ _____

3. $\frac{24xz}{64x^2x}$ _____

4. $\frac{30x^2}{51xy}$ _____

5. $\frac{18h^2d}{54d}$ _____

6. $\frac{17k^2m}{51k}$ _____

7. $\frac{18x^2y^2}{38xy}$ _____

8. $\frac{x^2}{x}$ _____

9. $\left(\left[\frac{48a^2b^2c^2}{64abc}\right]^{-2}\right)^3$ _____

10. $\left(\frac{-2k^4}{3j^3}\right)^3$ _____

11. $\frac{\pi r^2h}{2\pi r}$ _____

12. $\left(\frac{5x^3}{-2y^4}\right)^2$ _____

13. $\frac{40p^2q}{52pq^2}$ _____

14. $2^{-4}mn^{-3}$ _____

15. $\frac{5x^2y}{30xy}$ _____

16. $(a^2b^{-3})^2(a^{-4}b)$ _____

17. $\left(\frac{3x^3y^{-3}z^5}{2^3x^{-2}y^5z}\right)^{-1}$ _____

18. $\frac{6x^{-3}y}{9x^2y^{-2}}$ _____

Radicals.

Simplify. Do not approximate!

19. $\sqrt{\frac{1296}{169}}$ _____

20. $\sqrt{3000}$ _____

21. $\sqrt{\frac{4}{9}}$ _____

22. $\sqrt{24}$ _____

23. $\sqrt{32}$ _____

24. $\sqrt{98}$ _____

25. $\sqrt{8b^8}$ _____

26. $\sqrt{63x^3}$ _____

27. $\sqrt{a^2b}$ _____

28. $\sqrt{x^4y}$ _____

$$29. \sqrt{\frac{100}{64}}a^3 \quad \underline{\hspace{2cm}}$$

$$30. \sqrt{\frac{36}{49}}x^5y \quad \underline{\hspace{2cm}}$$

$$31. \sqrt{a^2 - 6a + 9} \quad \underline{\hspace{2cm}}$$

$$32. \sqrt{9x^2 + 6x + 1} \quad \underline{\hspace{2cm}}$$

$$33. \sqrt{3} - 2\sqrt{5} + 5\sqrt{3} \quad \underline{\hspace{2cm}}$$

$$34. \sqrt{8} + 2\sqrt{50} - \sqrt{18} \quad \underline{\hspace{2cm}}$$

$$35. \sqrt{9x} - \sqrt{16x} + \sqrt{25x} \quad \underline{\hspace{2cm}}$$

$$36. 3\sqrt{36a} + \sqrt{100a} - 2\sqrt{64a} \quad \underline{\hspace{2cm}}$$

$$37. a\sqrt{ab^3} + ab\sqrt{ab} - b\sqrt{a^3b} \quad \underline{\hspace{2cm}}$$

$$38. 3x\sqrt{25x^3} - x\sqrt{4x^3} + 3x\sqrt{9x^3} \quad \underline{\hspace{2cm}}$$

$$39. y\sqrt{8x^5} + xy\sqrt{18x^3} - x\sqrt{50x^3y^2} \quad \underline{\hspace{2cm}}$$

$$40. a\sqrt{27a^3} - b\sqrt{48b^3} - a^2\sqrt{75a} \quad \underline{\hspace{2cm}}$$

$$41. 2\sqrt{6} \cdot 3\sqrt{2} \quad \underline{\hspace{2cm}}$$

$$42. -5\sqrt{8x} \cdot 4\sqrt{3x} \quad \underline{\hspace{2cm}}$$

$$43. \sqrt{2}(5 + 3\sqrt{6}) \quad \underline{\hspace{2cm}}$$

$$44. (2 + 3\sqrt{7})(2 - 3\sqrt{7}) \quad \underline{\hspace{2cm}}$$

$$45. (2 + \sqrt{3})(2 - \sqrt{3}) \quad \underline{\hspace{2cm}}$$

$$46. (3\sqrt{7} + 2)^2 \quad \underline{\hspace{2cm}}$$

$$47. \sqrt{\frac{9}{2}} \cdot \sqrt{\frac{2}{3}} \quad \underline{\hspace{2cm}}$$

$$48. \frac{\sqrt{24x^2y}}{\sqrt{3xy^2}} \quad \underline{\hspace{2cm}}$$

$$49. (\sqrt{x} + 2\sqrt{y})^2 \quad \underline{\hspace{2cm}}$$

$$50. (\sqrt{x} + 4\sqrt{y})(5\sqrt{x} - 2\sqrt{y}) \quad \underline{\hspace{2cm}}$$

$$51. \frac{3\sqrt{2}}{4\sqrt{32}} \quad \underline{\hspace{2cm}}$$

$$52. \frac{-\sqrt{90}}{\sqrt{10}} \quad \underline{\hspace{2cm}}$$

$$53. \frac{\sqrt{5} - 1}{\sqrt{5} + 3} \quad \underline{\hspace{2cm}}$$

$$54. \frac{3\sqrt{2} + 2}{3 - 2\sqrt{5}} \quad \underline{\hspace{2cm}}$$

Solve the equation by any method.

$$55. 3 + \sqrt{a-1} = 5 \quad \underline{\hspace{2cm}}$$

$$56. 3\sqrt{3x-2} = 5\sqrt{x} \quad \underline{\hspace{2cm}}$$

$$57. 6 + \sqrt{m} = 5 \quad \underline{\hspace{2cm}}$$

$$58. 7 - 3\sqrt{2b} = 1 \quad \underline{\hspace{2cm}}$$

59. $\sqrt{2x-3} = \sqrt{3x-2}$ _____

60. $\sqrt{x-1} = 2 - \sqrt{x}$ _____

61. $(2t+3)(t+4) = 1$ _____

62. $\frac{x-1}{2x} = \frac{x+1}{x-2}$ _____

63. $\frac{c^2}{3} - \frac{1}{2} = \frac{5c}{6}$ _____

64. $3x^2 - 8x = -2$ _____

65. $\frac{x^2}{x-2} + 3 = \frac{2x}{x-2}$ _____

66. $(x-b)^2 = (x-b) + 4$ _____

Find the missing side. (c is the hypotenuse of the right triangle)

67. $a = 3$
 $b = 4$ _____

$b = 3$
68. $c = 7$ _____

$b = 9$
69. $c = 16$ _____

$c = 2\sqrt{17}$
70. $a = 2$ _____

Find the distance between the two points. Find the midpoint between the points.

71. $P(2,0), Q(8,-3)$ _____

72. $G\left(\frac{1}{3}, \frac{1}{6}\right), H\left(-\frac{2}{3}, \frac{8}{3}\right)$ _____

73. $A(-2,-1), B(3,-3)$ _____

74. $R(-3,3), S(2,-2)$ _____

Factoring

Factor by any method.

1. $m^2 - n^2$

4. $4 - 28t + 49t^2$

- 1. _____
- 2. _____

2. $x^2 + 14x + 49$

5. $121 - x^2$

- 3. _____
- 4. _____

3. $18x^2 - 32$

6. $2x^2 - 36x + 162$

- 5. _____
- 6. _____

7. $x^4 - 16$

8. $x^2 + y^2$

7. _____

8. _____

9. $c^2 + 26c + 169$

10. $3m^2 + 48m + 192$

9. _____

10. _____

11. $49x^2 - \frac{1}{4}$

12. $49z^2 - 56z + 16$

11. _____

12. _____

13. $x^2 + 17x + 52$

14. $100 - x^2$

13. _____

14. _____

15. $2yz^4 - 50yz^2$

16. $5c^2 - 4d^2$

15. _____

16. _____

17. $5a^3 - 20ab^2$

18. $32x^3 - 16x^2 + 2x$

17. _____

18. _____

19. $3x^9 - 48x$

20. $27m^3 + 36m^2 + 12m$

19. _____

20. _____

21. $13(g + 2) - 2(g + 2) + 8(g + 2)$

21. _____

22. $6h - 6k - h^4 + h^3k$

22. _____

23. $6rt - 5s + 2t - 15rs$

23. _____

24. $mn + np + 2m + 2p$

24. _____

25. $3ab + 12c + 9a + 4bc$

25. _____

Solve the equation.

26. $5b^2 - 4b = 33$

27. $m^2 + 6m - 10 = 0$

26. _____

27. _____

28. $2b^2 - 5 = 2b$

29. $\frac{3}{m-2} - 2 = \frac{1}{m-1}$

28. _____

29. _____

Trinomials #1 - factor each trinomial (time limit 4 minutes!)

1. $x^2 + 16x + 64$ _____

13. $3x^2 - x - 4$ _____

2. $9x^2 - 16$ _____

14. $25x^2 + 30x + 9$ _____

3. $6x^2 + 13x + 6$ _____

15. $x^2 - 22x + 121$ _____

4. $x^2 - 81$ _____

16. $x^2 + 5x - 36$ _____

5. $5x^2 + 10x + 30$ _____

17. $9x^2 - 1$ _____

6. $15x^2 - 19x - 10$ _____

18. $x^2 + 4x - 32$ _____

7. $1 - 9x^2$ _____

19. $x^2 - 196$ _____

8. $9x^2 + 6x - 8$ _____

20. $x^2 - 400$ _____

9. $100x^2 + 20x + 1$ _____

21. $x^2 - 6x - 27$ _____

10. $16x^2 - 25y^2$ _____

22. $9x^2 - 4$ _____

11. $2x^2 - 9y^2$ _____

23. $x^2 - 16x + 60$ _____

12. $35x^2 - 57x - 44$ _____

24. $x^2 + 3x - 88$ _____

Trinomials #2 Factor each trinomial (time limit 4 minutes!)

1. $x^2 + 17x + 70$ _____

16. $x^2 + 8x + 15$ _____

2. $x^2 - 12x + 36$ _____

17. $x^2 + 8x - 20$ _____

3. $x^2 + x - 132$ _____

18. $x^2 + 3x - 28$ _____

4. $x^2 - 11x + 30$ _____

19. $x^2 - 18x + 72$ _____

5. $x^2 - 4x + 3$ _____

20. $x^2 + 4x - 12$ _____

6. $x^2 - x - 12$ _____

21. $x^2 + 6x + 9$ _____

7. $x^2 + 4x - 5$ _____

22. $x^2 + 4x - 12$ _____

8. $x^2 - 5x + 6$ _____

23. $x^2 + 2x - 15$ _____

9. $x^2 - x - 6$ _____

24. $x^2 + 3x - 10$ _____

10. $x^2 - 6x - 27$ _____

25. $x^2 - 3x - 28$ _____

11. $x^2 + 2x - 35$ _____

26. $x^2 + 12x + 35$ _____

12. $x^2 + 13x + 42$ _____

27. $x^2 - 100$ _____

13. $x^2 - 8x + 15$ _____

28. $x^2 - 13x + 42$ _____

14. $x^2 + 8x + 12$ _____

29. $x^2 + x - 12c$ _____

15. $x^2 - 10x + 9$ _____

30. $x^2 + 13x + 42$ _____

Rational Equations.

Solve each equation.

1. $\frac{c}{35} = \frac{3}{7}$ _____

2. $\frac{10}{8.4} = \frac{5}{d}$ _____

3. $\frac{n}{5} = \frac{42}{7}$ _____

4. $\frac{b}{64} = \frac{5}{16}$ _____

5. $\frac{95}{3.6} = \frac{19}{n}$ _____

6. $\frac{7}{12} = \frac{1.68}{m}$ _____

7. $\frac{d}{d+4} = \frac{d-2}{d}$ _____

8. $\frac{2}{3x} = \frac{x-1}{x}$ _____

Simplify each expression.

9. $\frac{2x^2 - 6x}{6x^2}$ _____

10. $\frac{4 - x^2}{x^2 - x - 2}$ _____

11. $\frac{x^3 + 9x^2 + 14x}{x^2 - 4}$ _____

12. $\frac{x+1}{x^3(3-x)} \div \frac{5}{x(x-3)} \cdot \frac{3x^2}{4x} \cdot \frac{8x^2}{15x^4}$ _____

13. $\frac{x}{3x^2 - 9x} \cdot \frac{x-3}{2x^2 + x - 3}$ _____

14. $\frac{7x}{x^2 + 5x + 4} \cdot (x+4)$ _____

15. $\frac{4n}{n+5} \div \frac{n-9}{n+5}$ _____

16. $\frac{x^2 - 9}{4x^2} \div (x-3)$ _____

17. $\frac{6x^2 + 7x - 33}{x+4} \div (6x-11)$ _____

18. $\left(\frac{2x^2}{3} \cdot \frac{5}{x}\right) \div \frac{6x^2}{25}$ _____

19. $(4x^2 + x - 3) \cdot \frac{1}{(4x+3)(x-1)}$ _____

20. $\frac{7x^2}{6x} \cdot \frac{12x^2}{2x}$ _____

Simplify each expression.

21. $\frac{5}{x} + \frac{x-5}{x}$ _____

22. $\frac{4x}{3x^2 - x - 2} - \frac{x-2}{3x^2 - x - 2}$ _____

23. $\frac{7}{6x^2} + \frac{5}{8x^2}$ _____

24. $\frac{x+2}{x-1} - \frac{12}{x+6}$ _____

25. $\frac{x^2 - 9}{x+3} + \frac{x^2 + 9}{x-3}$ _____

26. $\frac{2}{x+1} + \frac{3}{x-2} + \frac{3}{x+4}$ _____

27. $\frac{2x+1}{3x-1} - \frac{x+4}{x-2}$ _____

28. $\frac{9}{x^2 - 3x} + \frac{3}{x-3}$ _____

Divide.

29. $(12x^2 - 20x + 8) \div 4x$ _____

31. $\frac{12x-5}{2x-3}$ _____

33. $(-x^2 - 6x - 16) \div (x + 2)$ _____

35. $(b^2 - 7b - 12) \div (4b + 4)$ _____

30. $(5x^2 + 2x + 3) \div (x + 2)$ _____

32. $(16y^3 - 36y^2 - 64) \div -4y^2$ _____

34. $(c^2 - 7c + 21) \div (2c - 6)$ _____

36. $\frac{y^2 + 5y + 7}{y + 2}$ _____

Solve each equation.

37. $\frac{5}{y+2} = \frac{y}{3}$ _____

39. $\frac{-4}{y-3} + 1 = \frac{-10}{y^2 + y - 12}$ _____

41. $\frac{7}{3x-12} - \frac{1}{x-4} = \frac{2}{3}$ _____

43. $2 + \frac{8}{x-5} = \frac{x+5}{x^2-25}$ _____

38. $\frac{2}{x} + \frac{1}{3} = \frac{4}{x}$ _____

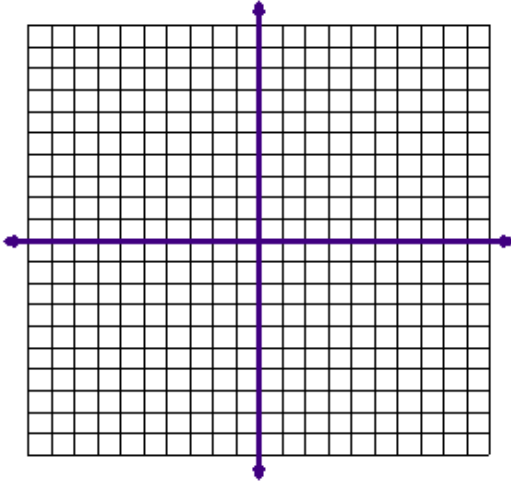
40. $\frac{56}{x} = \frac{9-x}{2}$ _____

42. $\frac{10}{x+3} - \frac{3}{5} = \frac{10x+1}{3x+9}$ _____

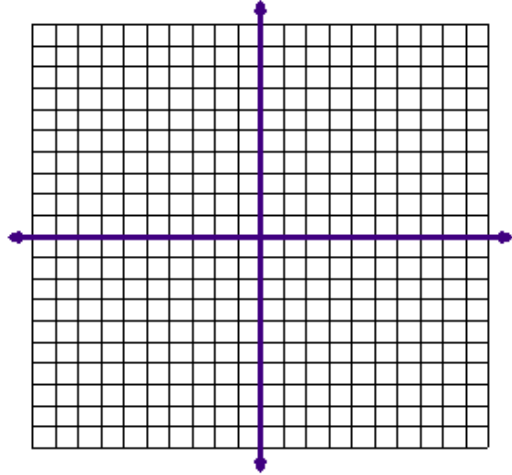
44. $\frac{x}{x-11} - 1 = \frac{22}{x^2-5x-66}$ _____

Graphing quadratic equations

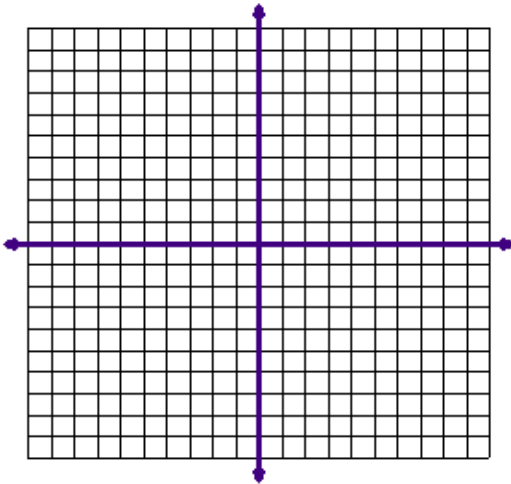
Graph each function.



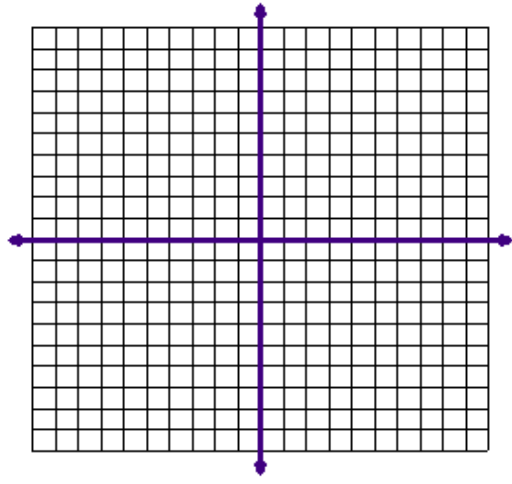
$$g(x) = x^2 - 5$$



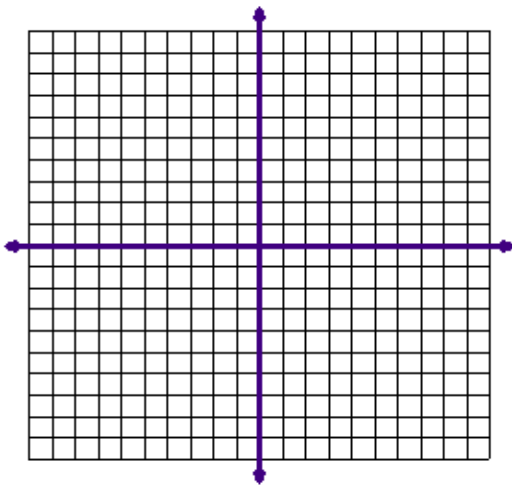
$$f(x) = -x^2 + 6$$



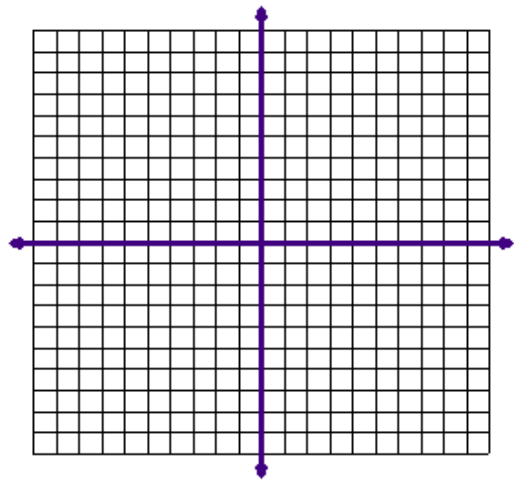
$$y = x^2 + 8x + 15$$



$$h(x) = 2x^2 - 3x + 1$$



$$g(x) = -\frac{1}{x^2} - 5$$



$$h(x) = (x+3)^2$$