

MUST SHOW WORK: 8th Grade H Alg 1 to HS H Alg 2 LIMIT CALCULATOR USE

Evaluate each expression.

1) $-4 - \left(-\frac{(7)(5)}{5} - 8 \right)$

2) $\frac{(4)(2)}{|8 - 6|}$

Name ALL the set or sets to which each number belongs. R- Real Number, Q-Rational Number, P-Irrational Number, Z-Integer, N-Whole/Natural Number,

3) 0

4) $\frac{19}{15}$

5) -5

6) $\sqrt{96}$

Evaluate each expression.

7) $\left(-\frac{2}{3} \right) + \frac{1}{4} - 1$

8) $(-2) + 2\frac{1}{4} - 4\frac{1}{2}$

Find each product.

9) $\left(4\frac{1}{6} \right) \left(-\frac{7}{5} \right)$

10) $\left(\frac{3}{4} \right) \left(-\frac{7}{9} \right)$

Find each quotient.

11) $\frac{-3\frac{4}{5}}{2\frac{4}{5}}$

12) $\frac{\frac{1}{4}}{\frac{8}{5}}$

Simplify each expression.

13) $-3(10 - 7x) - 4x(9x - 2)$

14) $-9(-7x - 3) - 5(-5 - 10x)$

Solve each equation. For fractions outside the () please clear the fractions first!

15) $7(4n + 5) = -7(3n - 5) - 2n$

16) $7p - 8p = -3(5 - 6p) - 6(5p + 3)$

17) $\frac{9}{5} \left(\frac{5}{6}k - \frac{1}{2} \right) = -\frac{6}{5} \left(\frac{7}{6}k + 1 \right)$

18) $-\frac{3}{2} + \frac{9}{5} \left(a + \frac{5}{6} \right) = -\frac{3}{2} \left(-\frac{11}{6}a + \frac{12}{7} \right) - \frac{16}{5}a$

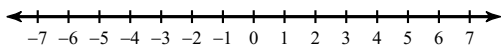
Solve each equation.

19) $-5|-5b + 3| - 5 = -40$

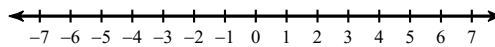
20) $|4x + 3| - 4 = 19$

Draw a graph for each inequality. Also show the solution set by writing INTERVAL NOTATION. May need to look up online.

21) $r < -2$

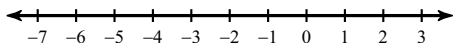


22) $0 \leq b$

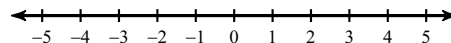


Solve each inequality and graph its solution. Include Solution Set in Interval Notation form.

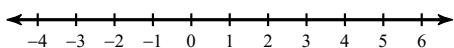
23) $4(1 + x) < -3x - (1 - 2x)$



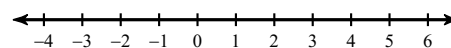
24) $-4(1 + 4x) + 1 < 1 + 4(-x + 2)$



25) $-\frac{11}{3}\left(3x + \frac{1}{3}\right) \geq -\frac{7}{3}\left(x + \frac{7}{3}\right)$

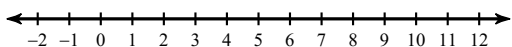


26) $2\left(\frac{1}{2}n + \frac{4}{3}\right) > \frac{2}{3}\left(\frac{3}{2}n + 1\right)$

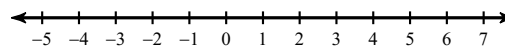


Solve each inequality and graph its solution. Include the solution set in Interval Notation.

27) $5|a - 5| + 6 \geq 21$



28) $-7 + 4|-2 - 6v| \leq 49$



Find the slope of the line through each pair of points.

29) $(15, -13), (10, 5)$

30) $(-13, 5), (1, 19)$

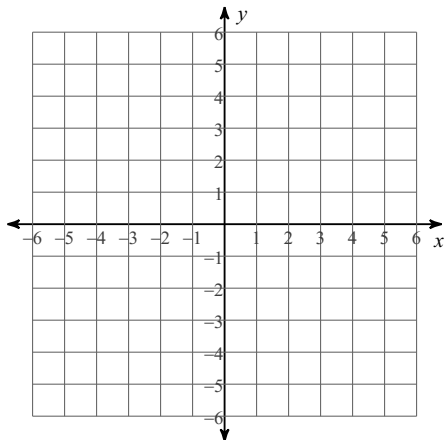
Find the value of x or y so that the line through the points has the given slope.

31) $(x, -9)$ and $(0, 6)$; slope: $-\frac{5}{3}$

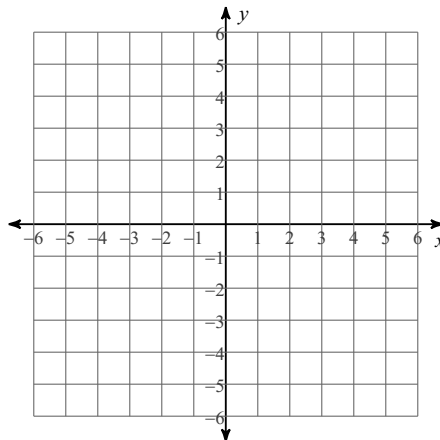
32) $(-3, y)$ and $(3, 3)$; slope: $-\frac{2}{3}$

Sketch the graph of each line.

33) x -intercept = -3 , y -intercept = -5

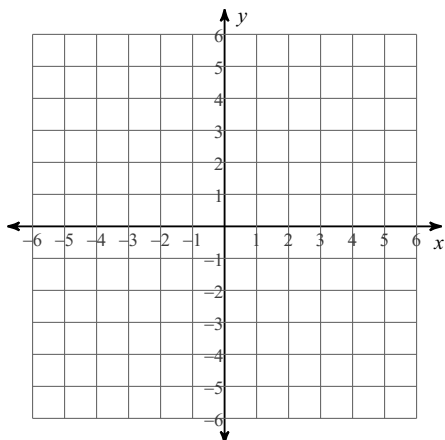


34) $3x - y = -2$

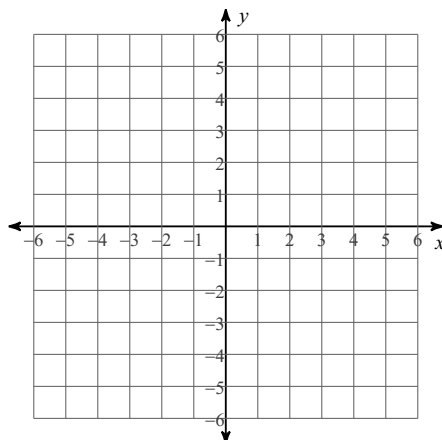


Sketch the graph of each linear inequality.

35) $4x + 3y \geq -15$

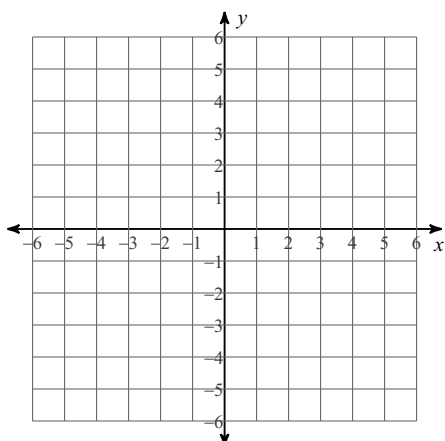


36) $y \leq 4x - 5$

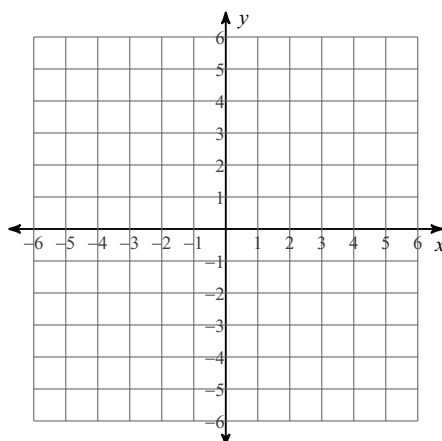


Graph each equation.

37) $y = |x - 1|$



38) $y = -|x + 3|$



Solve each system by graphing.

39) $12 = 3y + 2x$
 $0 = -2x + 2 + 2y$

Solve each system by elimination.

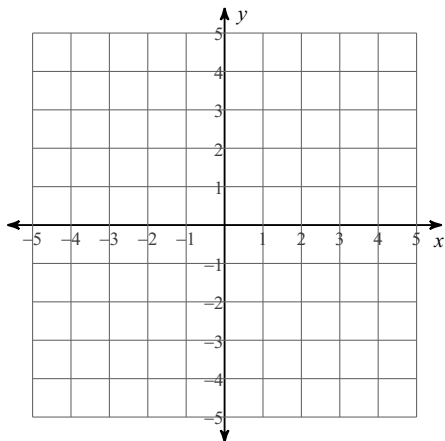
40) $-6x + 5y = -14$
 $-4x + 4y = -12$

Solve each system by substitution.

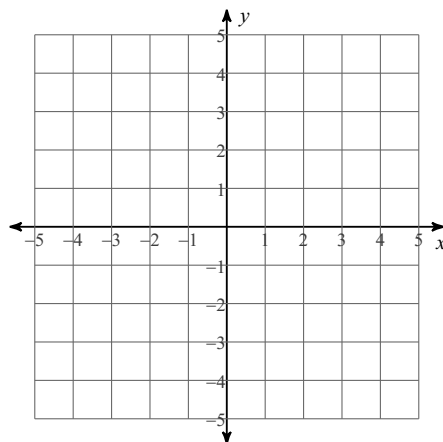
41) $4x - 8y = 8$
 $-7x + 8y = -20$

Sketch the solution to each system of inequalities.

$$42) \begin{cases} y \leq \frac{2}{3}x - 1 \\ y > 2x + 3 \end{cases}$$



$$43) \begin{cases} x + 3y \leq -9 \\ x - 3y \geq 3 \end{cases}$$



Simplify. Your answer should contain only positive exponents.

$$44) \frac{(a^{-3}b^2)^{-3} \cdot 2a^2}{2ab^{-3}}$$

$$45) \left(\frac{xy^3 \cdot x^3}{2x^2} \right)^{-3}$$

$$46) \frac{3x^0y^2 \cdot x^2y^{-1}}{(2x)^{-2}}$$

$$47) \left(\frac{2xy^2 \cdot 3x^2y^{-3}}{3xy^2} \right)^{-1}$$

$$48) \frac{(2ab^3 \cdot a^{-1}b^{-1})^2}{a^3b^{-1}}$$

$$49) \frac{(2y)^{-1} \cdot 3x^{-1}}{x^{-2}}$$

Name each polynomial by degree and number of terms.

$$50) -8n^2 + 6n - 7$$

$$51) -3n^4$$

Simplify each expression.

$$52) (6n^3 - 3n^4 - 8n) + (n^4 + 2n + n^3)$$

$$53) (7v + 7v^3 + 6) - (1 - v + 6v^3)$$

Divide.

$$54) (n^2 - 3n - 54) \div (n - 9)$$

$$55) (x^2 + 6x - 16) \div (x - 2)$$

$$56) (n^3 + n^2 + 4n - 6) \div (n - 1)$$

Find each product.

$$57) (n + 8)(3n + 8)$$

$$58) (7x - 1)(7x^2 - 8x - 5)$$

$$59) (2p^2 + p - 1)(3p^2 - 2p + 3)$$

$$60) (3n^2 - 2n + 1)(3n^2 - 2n + 1)$$

61) $(8x - 7)(8x + 7)$

62) $(3 + 6n)(3 - 6n)$

63) $(3n + 6)^2$

64) $(3a - 2)^2$

Factor the common factor out of each expression.

65) $3v^5 + 4v^3 - 3v^2$

66) $3n^4 + 2n^3$

Factor each completely.

67) $6v^2 - 18v - 24$

68) $4x^2 - 44x + 120$

69) $20a^2 + 164a + 168$

70) $2p^2 + 11p + 5$

71) $6x^2 - 23x + 10$

72) $30k^2 - 99k - 21$

73) $4x^2 + 3xy - y^2$

74) $4x^2 - 9xy + 2y^2$

Solve each equation by taking square roots.

75) $6n^2 + 9 = 159$

Solve each equation by factoring.

76) $a^2 - 2 = -a$

Solve each equation with the quadratic formula.

77) $4x^2 - 75 = 5x$

Find the value of c that completes the square.

78) $p^2 + 19p + c$

Solve each equation by completing the square.

79) $x^2 - 10x + 18 = 2$

Find the discriminant of each quadratic equation then state the number and type of solutions.

80) $-8m^2 + 6m + 2 = 0$

81) $-9v^2 + 7v - 3 = 0$

Simplify.

82) $-3\sqrt{12xy}$

83) $2\sqrt{8xy}$

84) $-\sqrt{27ab}$

85) $3\sqrt{18xy}$

Simplify. Use absolute value signs when necessary.

86) $\sqrt{8ab}$

87) $\sqrt{27xy}$

Simplify.

$$88) -\sqrt{3} - 3\sqrt{27}$$

$$89) -2\sqrt{45} + 2\sqrt{5}$$

$$90) \sqrt{15}(5\sqrt{5} + 2)$$

$$91) (\sqrt{5} - 2\sqrt{3})(-2\sqrt{5} + \sqrt{3})$$

$$92) \frac{3\sqrt{5}}{\sqrt{10}}$$

$$93) \frac{-4 - \sqrt{3}}{2\sqrt{14}}$$

$$94) \frac{3 - \sqrt{2}}{3 + \sqrt{2}}$$

$$95) \frac{\sqrt{2mn}}{\sqrt{3m^3n^4}}$$

Solve each equation. Remember to check for extraneous solutions.

$$96) 0 = \sqrt{-4 - 2b}$$

$$97) \sqrt{6 - 2v} = \sqrt{2v - 2}$$

$$98) v - 2 = \sqrt{2 - v}$$

Simplify each and state the excluded values.

$$99) \frac{36b}{42b^3}$$

$$100) \frac{42k^2}{18k - 6}$$

$$101) \frac{18b + 42}{18b + 30}$$

$$102) \frac{3p^3 + 24p^2 + 45p}{2p^2 + 20p + 42}$$

Simplify each expression.

$$103) \frac{1}{x + 6} \cdot \frac{6x + 36}{x - 5}$$

$$104) \frac{5}{2x + 6} \cdot \frac{2x + 6}{4}$$

$$105) \frac{4}{4p + 20} \div \frac{8}{p^2 - p - 30}$$

$$106) \frac{49m - 70}{3} \div \frac{49m - 70}{m - 2}$$

$$107) \frac{4}{3} + \frac{v - 6}{15v^2 - 12v}$$

$$108) \frac{2}{3n} + \frac{n - 6}{4n + 6}$$

$$109) \frac{2k}{k + 1} - \frac{2}{k - 4}$$

$$110) \frac{5}{x + 5} - \frac{2}{x + 1}$$

Solve each equation.

$$111) -5(r - 2) = 14 - 3r$$

$$112) -3(10 + 3n) + 5(-n - 10) = -n - 9n$$

$$113) |7m - 10| = 10$$

$$114) \text{ Solve } P = 2l + 2w \text{ for } l.$$

115) The sum of 3 consecutive integers is -39.
Write an equation to represent this relationship, then find the integers.

116) The length of a rectangle is 2 in. more than its width. The perimeter is 36 in.
Find the width.

Write the standard form of the equation of the line described.

117) through: $(3, 4)$, perp. to $y = -\frac{1}{3}x - 5$

Write the point-slope form of the equation of the line through the given point with the given slope.

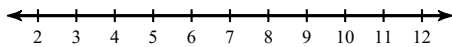
118) through: $(-1, -3)$, slope = 4

Write the standard form of the equation of the line through the given point with the given slope.

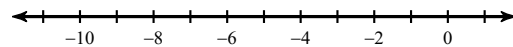
119) through: $(0, 0)$, slope = $-\frac{2}{3}$

Solve each inequality and graph its solution.

120) $35 + 4k \leq 5 - 2(1 - 6k)$

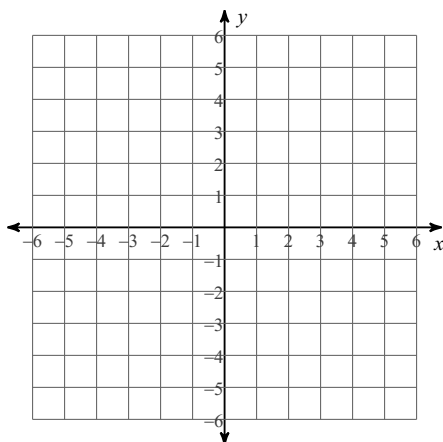


121) $|-k - 4| \leq 3$

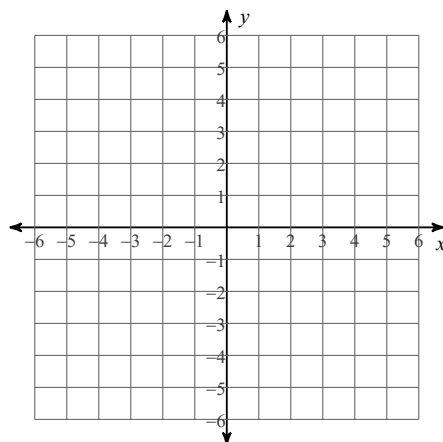


Sketch the graph of each line.

122) $5x + 4y = -20$

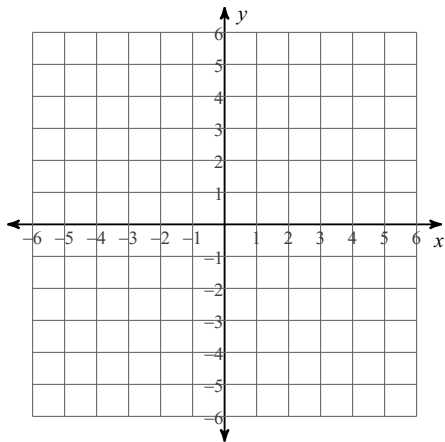


123) $x + 2y = 0$

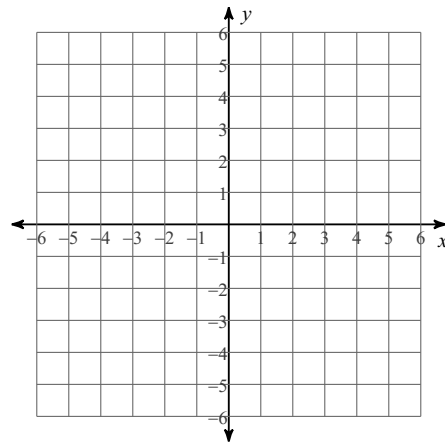


Sketch the graph of each linear inequality.

124) $y < -4x - 5$



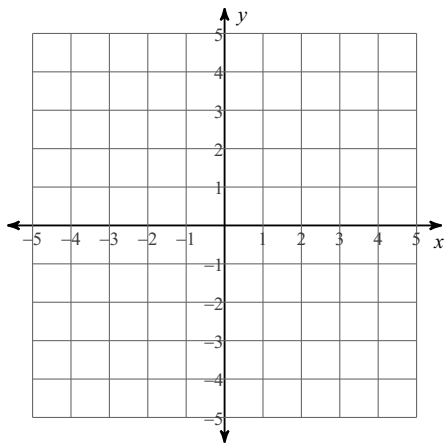
125) $9x + 4y \leq 16$



Sketch the solution to each system of inequalities.

126) $y > \frac{1}{3}x + 1$

$y > \frac{1}{3}x + 3$

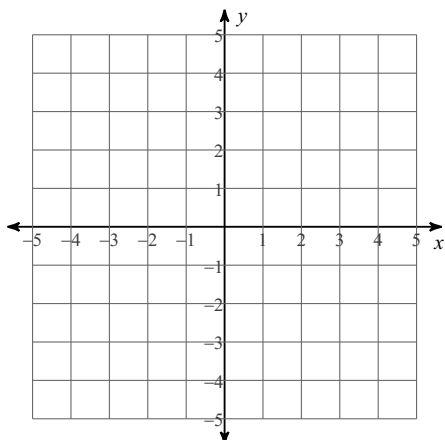


127) Kristin's school is selling tickets to a choral performance. On the first day of ticket sales the school sold 4 adult tickets and 8 child tickets for a total of \$128. The school took in \$140 on the second day by selling 5 adult tickets and 8 child tickets. What is the price each of one adult ticket and one child ticket?

128) Jasmine and Jenny are selling cookie dough for a school fundraiser. Customers can buy packages of white chocolate chip cookie dough and packages of double chocolate cookie dough. Jasmine sold 5 packages of white chocolate chip cookie dough and 2 packages of double chocolate cookie dough for a total of \$51. Jenny sold 5 packages of white chocolate chip cookie dough and 3 packages of double chocolate cookie dough for a total of \$59. Find the cost each of one package of white chocolate chip cookie dough and one package of double chocolate cookie dough.

Solve the system of equations.

$$\begin{aligned} 129) \quad & 4x = -y + 4 \\ & -6 = x + 2y \end{aligned}$$

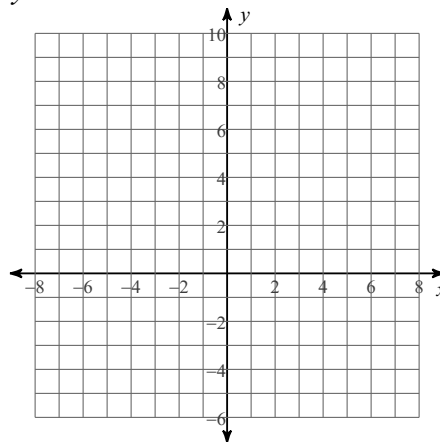


Find the x-coordinate of the solution the system.

$$\begin{aligned} 130) \quad & y = 5 \\ & y = -\frac{3}{4}x + 8 \end{aligned}$$

131) Solve the system of functions by graphing.

$$\begin{aligned} & y = 2x + 2 \\ & y = x^2 - 6 \end{aligned}$$



Simplify. Your answer should contain only positive exponents.

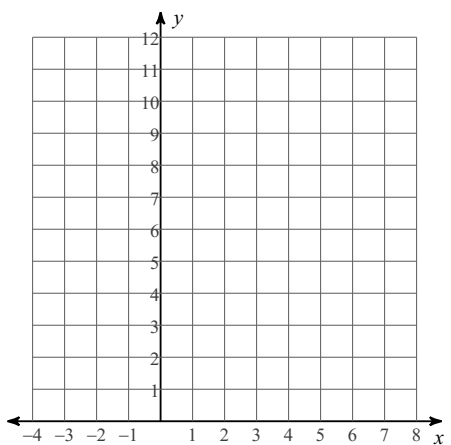
$$132) \quad 5y^{-4} \cdot 3x^0y^4$$

$$133) \quad (x^4y^4 \cdot x^{-4}y^0)^{-1}$$

$$134) \quad \frac{5xy^4}{3x^3y^{-1}}$$

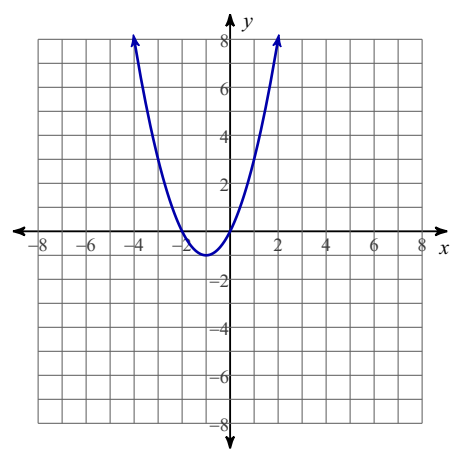
Sketch the graph of each function. Can you label the vertex? Can you make a tov? Do you know what image or reflection points are?

135) $f(x) = 2x^2 - 4x + 5$



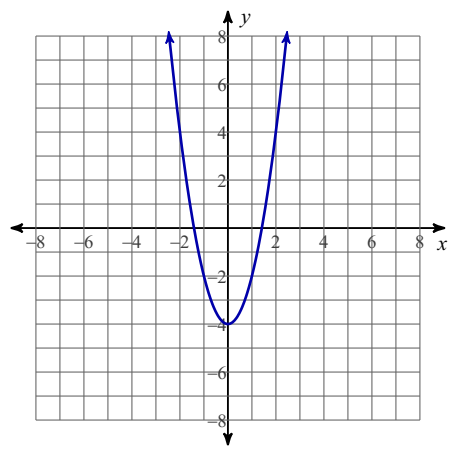
Identify the domain of the graph. represent in interval notation and use ().

136)



Identify the range of the graph. represent in interval notation and use ()

137)



Answers to MUST SHOW WORK: 8th Grade H Alg 1 to HS H Alg 2 LIMIT CALCULATOR

1) 11
5) Z, Q, R

2) 4
6) I, R

3) W, Z, Q, R

4) Q, R

7) $-\frac{17}{12}$

8) $-\frac{17}{4}$

9) $-\frac{35}{6}$

10) $-\frac{7}{12}$

11) $-\frac{19}{14}$

12) $\frac{5}{32}$

13) $-30 + 29x - 36x^2$

14) $113x + 52$

15) $\{0\}$

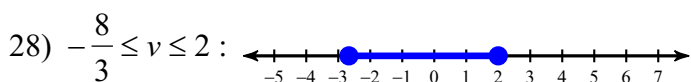
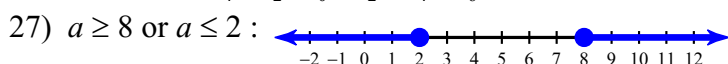
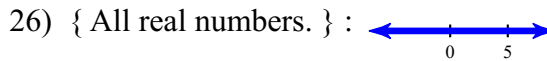
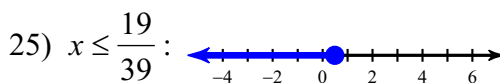
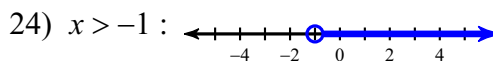
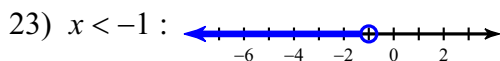
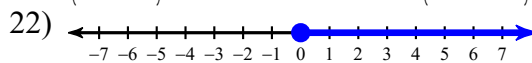
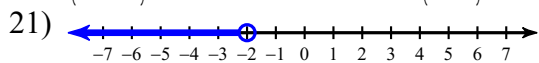
16) $\{-3\}$

17) $\left\{-\frac{3}{29}\right\}$

18) $\left\{-\frac{8}{7}\right\}$

19) $\left\{-\frac{4}{5}, 2\right\}$

20) $\left\{5, -\frac{13}{2}\right\}$



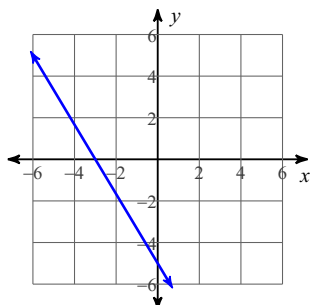
29) $-\frac{18}{5}$

30) 1

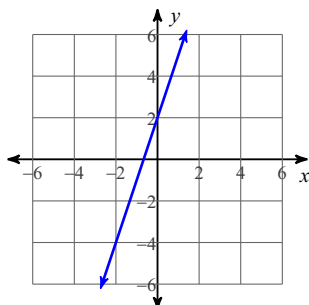
31) 9

32) 7

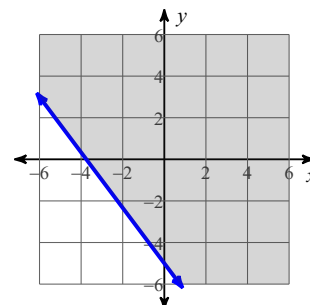
33)



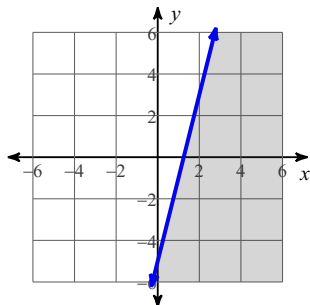
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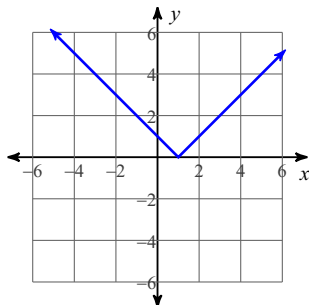
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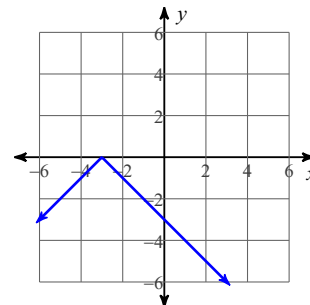
36)



37)



38)

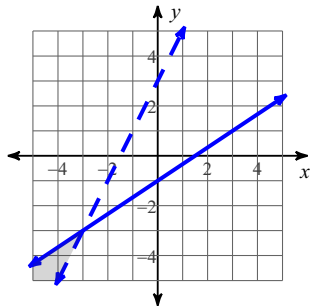


39) (3, 2)

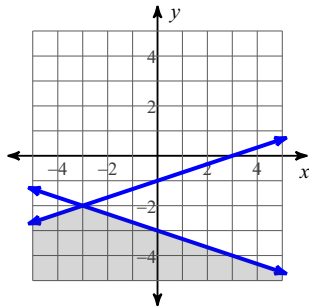
40) (-1, -4)

41) (4, 1)

42)



43)



44) $\frac{a^{10}}{b^3}$

45) $\frac{8}{x^6 y^9}$

46) $12x^4 y$

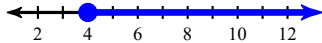
47) $\frac{y^3}{2x^2}$

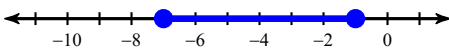
48) $\frac{4b^5}{a^3}$

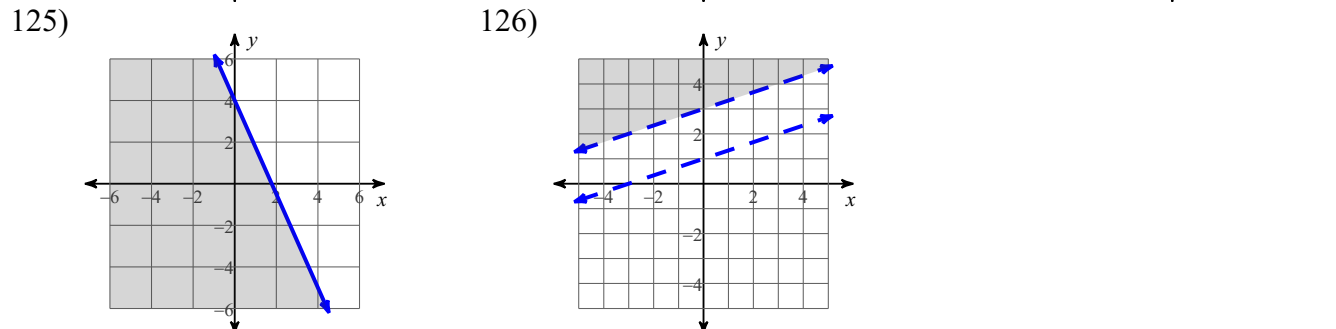
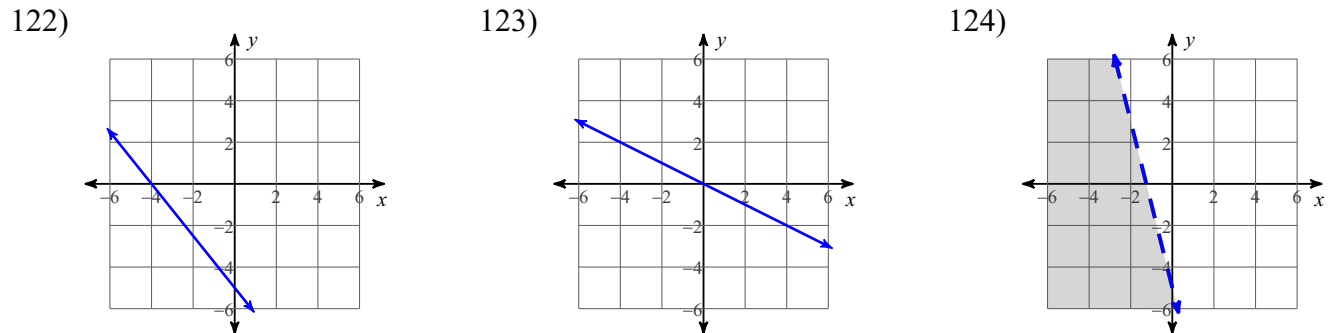
- 49) $\frac{3x}{2y}$ 50) quadratic trinomial 51) quartic monomial 52) $-2n^4 + 7n^3 - 6n$
- 53) $v^3 + 8v + 5$ 54) $n + 6$ 55) $x + 8$ 56) $n^2 + 2n + 6$
- 57) $3n^2 + 32n + 64$ 58) $49x^3 - 63x^2 - 27x + 5$ 59) $6p^4 - p^3 + p^2 + 5p - 3$
- 60) $9n^4 - 12n^3 + 10n^2 - 4n + 1$ 61) $64x^2 - 49$ 62) $9 - 36n^2$
- 63) $9n^2 + 36n + 36$ 64) $9a^2 - 12a + 4$ 65) $v^2(3v^3 + 4v - 3)$ 66) $n^3(3n + 2)$
- 67) $6(v - 4)(v + 1)$ 68) $4(x - 6)(x - 5)$ 69) $4(5a + 6)(a + 7)$ 70) $(2p + 1)(p + 5)$
- 71) $(2x - 1)(3x - 10)$ 72) $3(5k + 1)(2k - 7)$ 73) $(x + y)(4x - y)$ 74) $(x - 2y)(4x - y)$
- 75) $\{5, -5\}$ 76) $\{1, -2\}$ 77) $\left\{5, -3\frac{3}{4}\right\}$ 78) $\frac{361}{4}$

- 79) $\{8, 2\}$ 80) 100; two real solutions
- 81) -59 ; two imaginary solutions 82) $-6\sqrt{3xy}$ 83) $4\sqrt{2xy}$
- 84) $-3\sqrt{3ab}$ 85) $9\sqrt{2xy}$ 86) $2\sqrt{2ab}$ 87) $3\sqrt{3xy}$
- 88) $-10\sqrt{3}$ 89) $-4\sqrt{5}$ 90) $25\sqrt{3} + 2\sqrt{15}$ 91) $-16 + 5\sqrt{15}$
- 92) $\frac{3\sqrt{2}}{2}$ 93) $\frac{-4\sqrt{14} - \sqrt{42}}{28}$ 94) $\frac{11 - 6\sqrt{2}}{7}$ 95) $\frac{\sqrt{6n}}{3n^2m}$
- 96) $\{-2\}$ 97) $\{2\}$ 98) $\{2\}$ 99) $\frac{6}{7b^2}; \{0\}$

- 100) $\frac{7k^2}{3k - 1}; \left\{\frac{1}{3}\right\}$ 101) $\frac{3b + 7}{3b + 5}; \left\{-\frac{5}{3}\right\}$ 102) $\frac{3p(p + 5)}{2(p + 7)}; \{-7, -3\}$
- 103) $\frac{6}{x - 5}$ 104) $\frac{5}{4}$ 105) $\frac{p - 6}{8}$ 106) $\frac{m - 2}{3}$
- 107) $\frac{20v^2 - 15v - 6}{3v(5v - 4)}$ 108) $\frac{-10n + 12 + 3n^2}{6n(2n + 3)}$ 109) $\frac{2k^2 - 10k - 2}{(k - 4)(k + 1)}$ 110) $\frac{3x - 5}{(x + 5)(x + 1)}$
- 111) $\{-2\}$ 112) $\{-20\}$ 113) $\left\{\frac{20}{7}, 0\right\}$ 114) $l = \frac{P}{2} - w$

- 115) $x + (x + 1) + (x + 2) = -39$; $-14, -13, -12$
- 118) $y + 3 = 4(x + 1)$ 119) $2x + 3y = 0$ 120) $k \geq 4$: 

- 121) $-7 \leq k \leq -1$: 



128) package of white chocolate chip cookie dough: \$7, package of double chocolate cookie dough: \$8

129) $(2, -4)$

130) 4

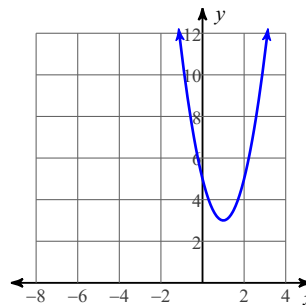
131) $(-2, -2); (4, 10)$

132) 15

133) $\frac{1}{y^4}$

134) $\frac{5y^5}{3x^2}$

135)



136) $\{-\infty, \infty\}$

137) $\{-4, \infty\}$