

CP Algebra 2

Summer Math Packet

Completion of the summer math packet is a GAC requirement and will serve as preparation for the fall semester. You must show all the work and steps for solving the problems.

This Packet is designed to be completed over time and in small chunks.

Due Date: August 5, 2024

Name: _____

Due the First Day of School

Date _____ Period _____

Evaluate each using the values given.

1) $b - (b + c) - (b - 7)$; use $b = 9$, and $c = -1$

2) $z - x(z + z + y)$; use $x = -5$, $y = -3$, and $z = -3$

3) $y\left(\frac{z}{3} - |x|\right)$; use $x = 10$, $y = 10$, and $z = 3$

4) $x + y + 10 - (z + y)$; use $x = -10$, $y = -10$, and $z = -3$

5) $\frac{x}{3} + 9 + x + z$; use $x = 9$, and $z = -1$

6) $p - p + m + 8 - m$; use $m = -10$, and $p = -4$

7) $z + |z - z| - x$; use $x = -10$, and $z = 6$

8) $|xy| \times \frac{z}{2}$; use $x = 2$, $y = -5$, and $z = 10$

9) $b + a + 8 - |b|$; use $a = 10$, and $b = 3$

10) $|y| - (z + y + 5)$; use $y = -10$, and $z = 2$

Simplify each expression.

11) $-(8x + 2) - 3x(6 + 2x)$

12) $-5b(1 - 6b) - b(2b + 3)$

13) $-2(-6a + 3) + 5(1 - 8a)$

14) $6p(p + 6) - 2p(p + 3)$

15) $8(a + 6) + 6a(5a - 1)$

16) $5(3a - 6) - 2(4a + 2)$

17) $-8p(p + 2) - 5p(1 - p)$

18) $-5r(1 + 2r) + 8(-r + 3)$

19) $4r(r + 2) - 5(r + 6)$

20) $8(-p + 6) + 3(3p - 6)$

Solve each equation.

21) $-12 + 4a - 12a = -4(5 - 10a) - 5(12a + 8)$

22) $8(1 + p) = 2(4p + 1) + 6$

23) $9n - 2(11n + 12) = -n + 6(5n - 11)$

24) $10(x - 12) = 10(2x - 1)$

25) $-11(n + 3) + 7(n + 4) = n - 12 - 8 - 6n$

26) $-12(x - 1) = -(1 + 11x)$

27) $12(12 - 6n) = 4(10n + 8)$

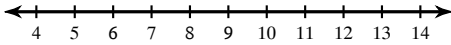
28) $6(2 + 3p) = 4(4p + 7) + 10p$

29) $2(m - 8) - 6 = -5(11m - 7)$

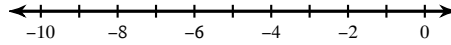
30) $3(-9x + 1) = 5(10 - 4x) - 5$

Solve each inequality and graph its solution.

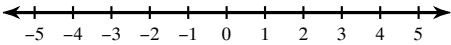
31) $4(x + 5) > 5(x + 2)$



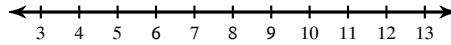
32) $7(10x + 11) \geq 4x + 11(1 + 4x)$



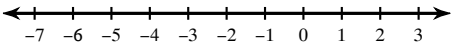
33) $2(n + 1) > -11(n + 1)$



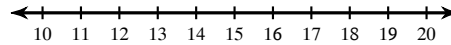
34) $2(-2 - 5x) \geq -(11x - 7)$



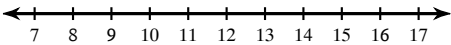
35) $12(x - 7) > -11(x + 5) - 6$



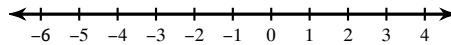
36) $-1 + 2m \geq 2(3m + 2) - (5 + 4m)$



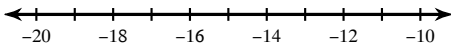
37) $6(2v - 4) - 10v \geq -4 - 8(v - 10)$



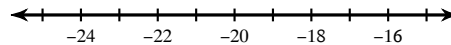
38) $-8v - 8v > 8(v - 9) - 4(11v - 8)$



39) $-11(b + 12) \geq 8(b + 12)$

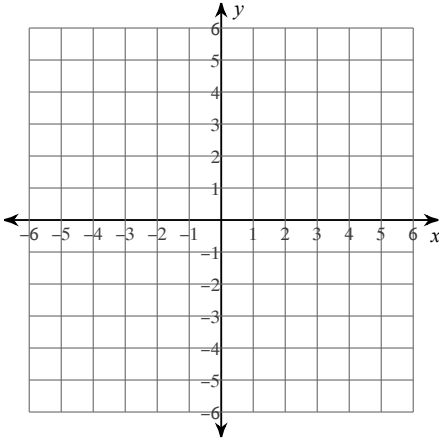


40) $3(n - 10) > 6(n + 6) - 9$

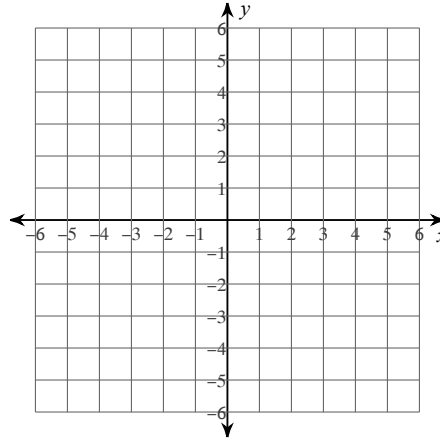


Sketch the graph of each line.

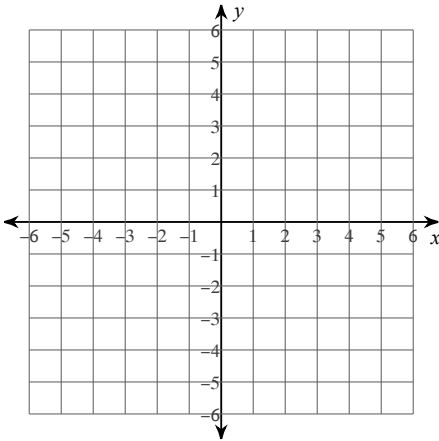
41) $2x - y = 3$



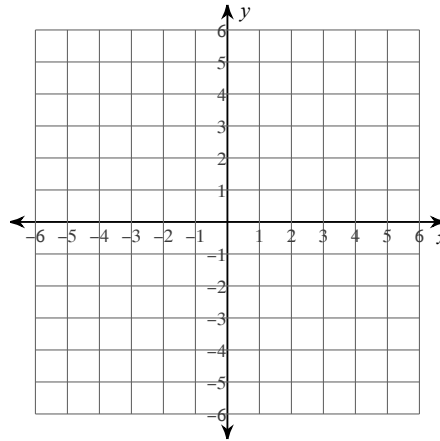
42) $x + 2y = 4$



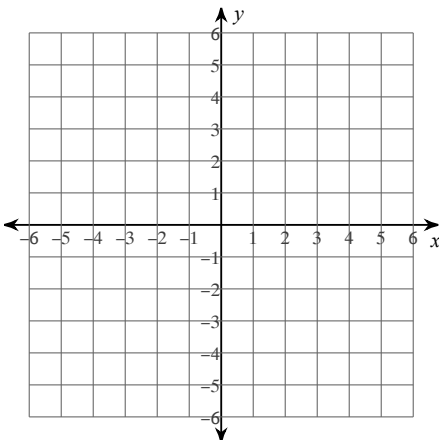
43) $x - y = -5$



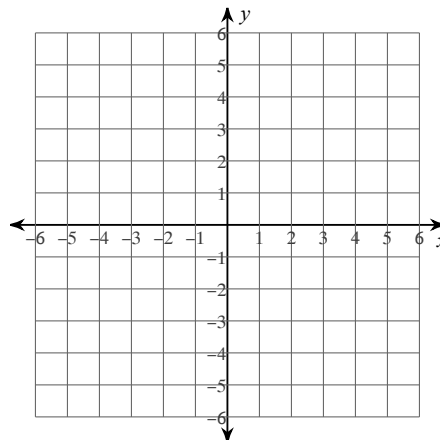
44) $2x - y = 1$



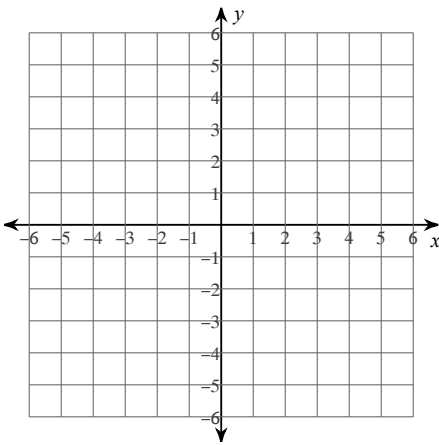
45) $2x + y = -1$



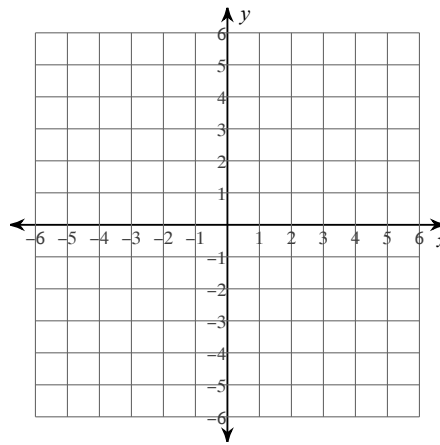
46) $4x + y = -3$



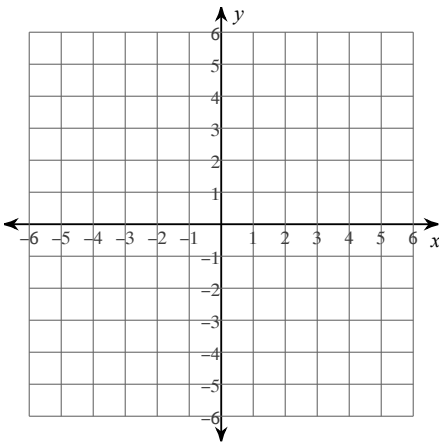
47) $y = -5$



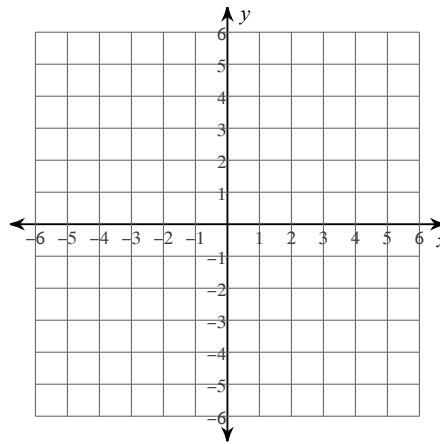
48) $x - y = -4$



49) $2x + y = 1$

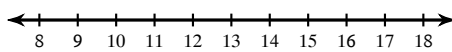


50) $6x + 5y = 15$

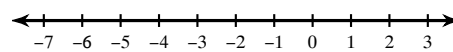


Solve each inequality and graph its solution.

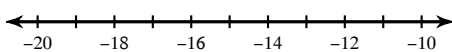
51) $-9(5n + 11) \leq -9(1 + 6n)$



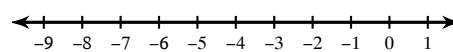
52) $-5k - 10(3 + 6k) < 5(-6 - 10k) - 5k$



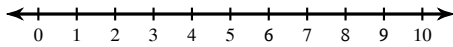
53) $-4(8n + 1) + 11(n - 1) \leq -12n - 8n$



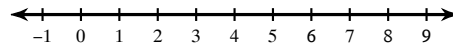
54) $-7(b + 11) < 7(b - 7)$



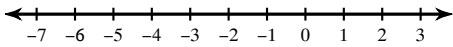
$$55) -12(10x - 10) \geq 12(-4x - 2)$$



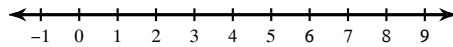
$$56) 7(-9 + 2b) < 10(b - 4) + 1$$



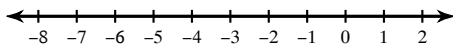
$$57) -3(1 - 9x) \geq 5(x - 5)$$



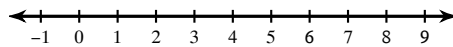
$$58) 4(n - 3) > 4 + 8(1 - n)$$



$$59) -10 + 11(x + 8) \leq 9(-11x - 4) + 4$$



$$60) -11(8 - 6v) - 9v \leq 10(6v - 10)$$



Factor each completely.

$$61) n^2 - 5n + 6$$

$$62) x^3 + 7x^2 + 10x$$

$$63) 2x^3 - 4x^2 - 70x$$

$$64) 2v^3 + 24v^2 + 54v$$

$$65) v^2 - 7v + 10$$

$$66) 3r^2 + 12r + 12$$

$$67) x^2 + 4x + 3$$

$$68) 5k^2 - 40k - 100$$

$$69) 6n^2 - 54n + 84$$

$$70) 2x^4 - 4x^3 - 70x^2$$

Write the slope-intercept form of the equation of the line described.

71) through: $(1, -2)$, parallel to $y = \frac{1}{4}x - 1$

72) through: $(2, 1)$, parallel to $y = \frac{1}{2}x - 5$

73) through: $(-2, 3)$, parallel to $y = -x - 2$

74) through: $(1, 2)$, parallel to $y = -\frac{5}{3}x - 3$

75) through: $(3, -5)$, parallel to $y = -\frac{8}{3}x - 3$

76) through: $(2, -5)$, parallel to $y = -4x - 4$

77) through: $(-2, -1)$, parallel to $y = -\frac{4}{5}x + 5$

78) through: $(-5, -1)$, parallel to $y = -\frac{1}{5}x - 1$

79) through: $(3, 1)$, parallel to $y = \frac{1}{2}x - 1$

80) through: $(-3, 3)$, parallel to $y = -\frac{4}{3}x + 4$

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

81) through: $(4, 1)$, slope = $\frac{3}{2}$

82) through: $(-1, -2)$, slope = 7

83) through: $(5, -4)$, slope = $-\frac{8}{5}$

84) through: $(4, -4)$, slope = -2

85) through: $(-1, -2)$, slope = -1

86) through: $(-1, 3)$, slope = -1

87) through: $(3, 1)$, slope = undefined

88) through: $(-3, -2)$, slope = $\frac{1}{3}$

89) through: $(5, 1)$, slope = $-\frac{3}{10}$

90) through: $(-5, 4)$, slope = -2

Write the slope-intercept form of the equation of the line through the given points.

91) through: $(-3, 0)$ and $(-5, 5)$

92) through: $(-2, 5)$ and $(-2, 0)$

93) through: $(0, -4)$ and $(1, 5)$

94) through: $(0, 1)$ and $(1, 4)$

95) through: $(0, 0)$ and $(2, 1)$

96) through: $(0, 1)$ and $(1, -3)$

97) through: $(2, 5)$ and $(2, 1)$

98) through: $(-2, 3)$ and $(2, 2)$

99) through: $(0, 1)$ and $(1, 5)$

100) through: $(3, -3)$ and $(2, -5)$

