

## Summer Review from Algebra I

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**Evaluate each expression.**

1)  $6 \times (11 - 1 + 8) \div 6$

2)  $3 + 5 - 3 + 3 - 5$

3)  $(6 - 5)(5 + 5 \times 4)$

**Evaluate each using the values given.**

4)  $p(q + m + p)$ ; use  $m = 1$ ,  $p = 3$ , and  $q = 5$

5)  $q^2(m + m)$ ; use  $m = 1$ , and  $q = 3$

6)  $p + r + q - q$ ; use  $p = 2$ ,  $q = 1$ , and  $r = 4$

**Simplify each expression.**

7)  $4 - 5(1 - 4k)$

8)  $-5(1 - 6v) - 4v$

9)  $4m - 9(6m + 10)$

**Solve each equation.**

10)  $10 = -2n - 3n$

11)  $8 = 3x - 5 - 8$

12)  $-4x + 5x = 6$

13)  $2 + 3(1 + 4m) = 101$

14)  $306 = 6(7x + 2)$

15)  $-5 + 5(6 - 5x) = 150$

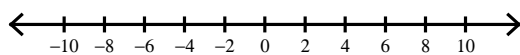
16)  $|n - 2| = 3$

17)  $|x + 3| = 11$

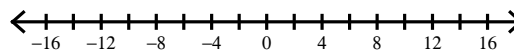
18)  $|-9x| = 63$

**Solve each inequality and graph its solution.**

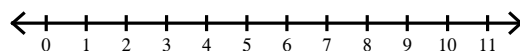
19)  $|-8x| \geq 64$



20)  $\left| \frac{k}{3} \right| < 5$



21)  $|a - 6| > 2$

**Simplify.**

22)  $3xy^2 \cdot -y^2$

23)  $4x \cdot -4x^4y^3$

24)  $-2yx^3 \cdot -2x$

25)  $(y^4)^4$

26)  $(2ab^3)^4$

27)  $(3yx^2)^3$

28)  $\frac{b}{2b^2}$

29)  $\frac{3v}{4v^3}$

30)  $\frac{3n}{2n^3}$

**Factor each completely.**

31)  $16n^2 - 25$

32)  $4k^2 - 1$

33)  $25k^2 - 16$

34)  $x^3 + 8x^2 + 15x$

35)  $6a^2 - 18a - 324$

36)  $3n^2 - 24n + 45$

37)  $k^4 + 13k^3 + 40k^2$

38)  $6a^2 - 84a + 294$

39)  $r^2 - r - 12$

40)  $b^3 + 5b^2 + 6b$

41)  $4p^2 - 56p + 196$

42)  $a^2 + 6a - 7$

43)  $6k^2 + 84k + 240$

**Evaluate each function.**

44)  $w(t) = 3t - 4$ ; Find  $w(-3)$

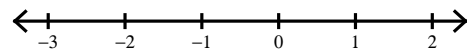
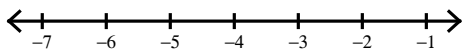
45)  $g(a) = a + 3$ ; Find  $g(-10)$

46)  $p(n) = 2n + 3$ ; Find  $p(1)$

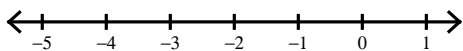
**Solve each inequality and graph its solution.**

47)  $-3 - 7a - 8 \leq 24$

48)  $6 - 4p - 6p \leq 6$

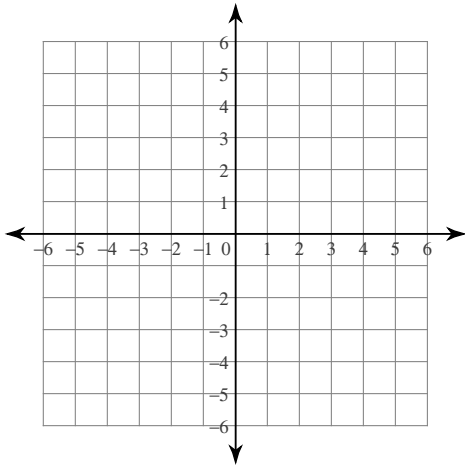


49)  $-a + 3a < -6$

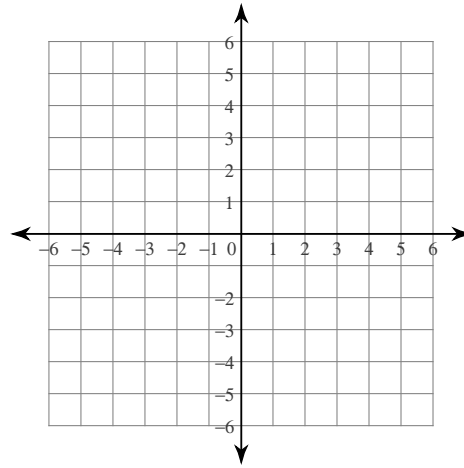


Sketch the graph of each line.

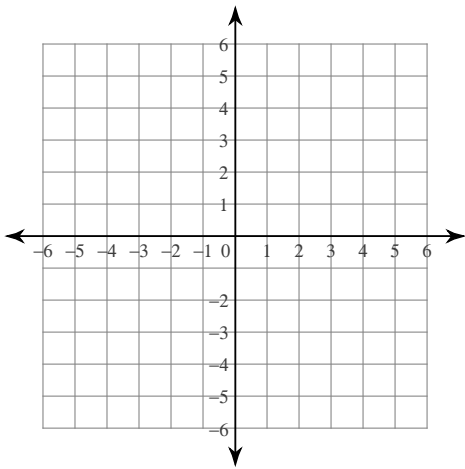
50)  $x - 3y = 12$



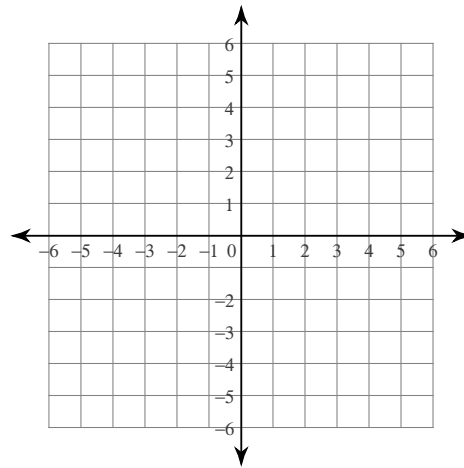
51)  $5x - 3y = 12$



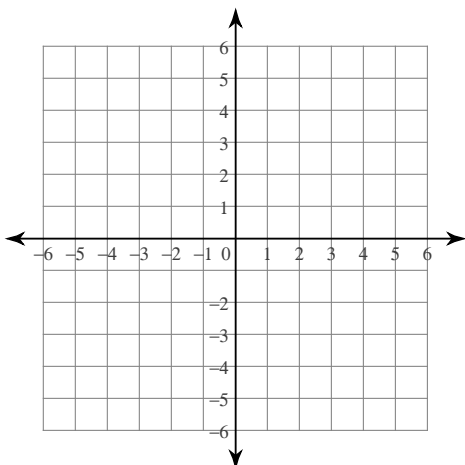
52)  $x + 5y = -25$



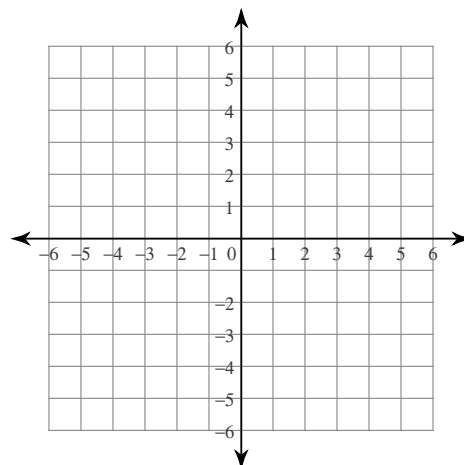
53)  $y = \frac{6}{5}x - 3$



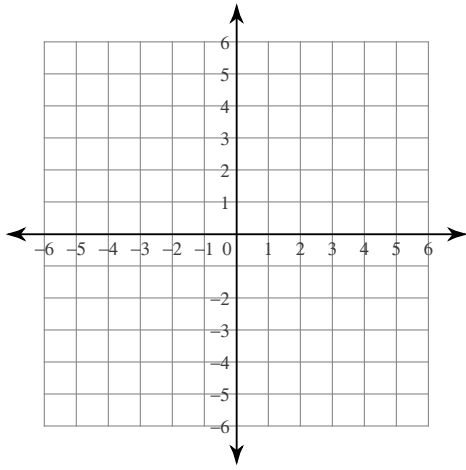
54)  $y = \frac{1}{3}x + 4$



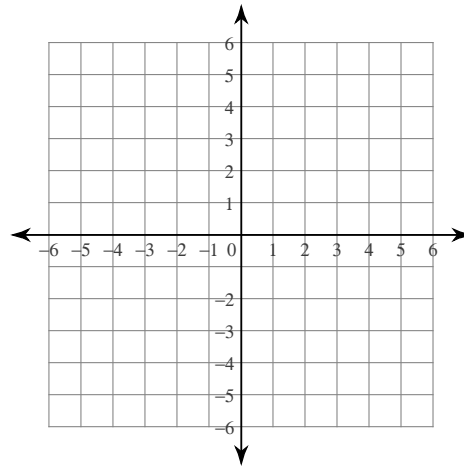
55)  $y = \frac{3}{5}x - 2$



56)  $y = x + 5$



57)  $y = \frac{6}{5}x + 5$



**Write the slope-intercept form of the equation of each line.**

58)  $-9x + 16 = -4y$

59)  $-1 = -\frac{1}{2}y$

60)  $y + 3x - 2 = 0$

**Find the slope of a line through the two points.**

61) through:  $(4, 1)$  and  $(3, -5)$

62) through:  $(-4, 5)$  and  $(4, -5)$

63) through:  $(-1, -2)$  and  $(3, 1)$

**Simplify.**

64)  $\sqrt{75n}$

65)  $\sqrt{72r}$

66)  $\sqrt{252m^4}$

**Solve each system by substitution.**

67)  $8x + 3y = -1$   
 $y = x + 7$

68)  $-x - y = 5$   
 $y = x + 1$

69)  $y = -8x - 21$   
 $-2x + 2y = 12$

70)  $y = 3x - 13$   
 $8x - 4y = 24$

**Solve each system by elimination.**

71)  $-4x - 8y = 4$   
 $4x - 5y = 22$

72)  $-2x + 5y = 8$   
 $-x - 5y = -26$

73)  $-2x + y = -9$   
 $4x - y = 15$

74)  $2x - 3y = -10$   
 $2x - y = 2$

75)  $2x + 9y = -12$   
 $6x + 9y = 0$