

## Adv. Algebra Summer Homework

Date \_\_\_\_\_ Period \_\_\_\_\_

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

1)  $(11, 19), (-17, 9)$

2)  $(1, 2), (5, 12)$

3)  $(18, 4), (-8, -6)$

4)  $(0, -18), (15, -20)$

5)  $(16, -10), (-13, -8)$

6)  $(14, -14), (-13, 19)$

**Solve each equation.**

7)  $\frac{b}{13} = 18$

8)  $-\frac{13}{14} = \frac{m}{14}$

9)  $7 + a = 24$

10)  $\frac{a}{4} = -4$

11)  $8(-5 + 5v) = -160$

12)  $3n - 7(-3n - 3) = 141$

13)  $150 = -3(6x - 8)$

14)  $-4 - 3x = -(8 + x)$

15)  $-6(3n + 7) - n = 4n + 4$

16)  $3 + 7p = 3(2p + 1) - 2$

17)  $-4 = \frac{-5 + m}{2}$

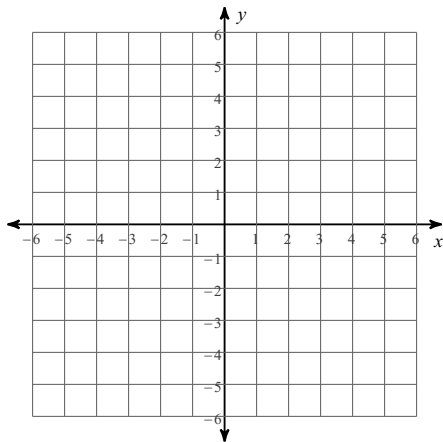
18)  $-10 - 5b = -35$

19)  $-71 = 5 + 4n$

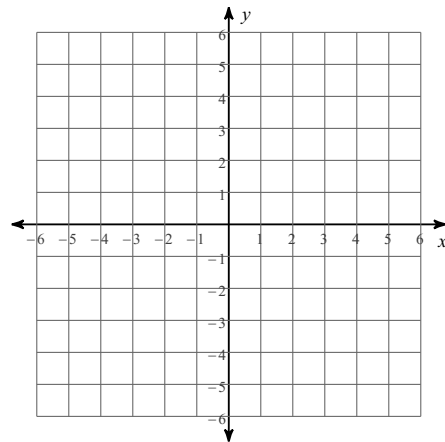
20)  $-1 = \frac{2 + b}{14}$

Sketch the graph of each line.

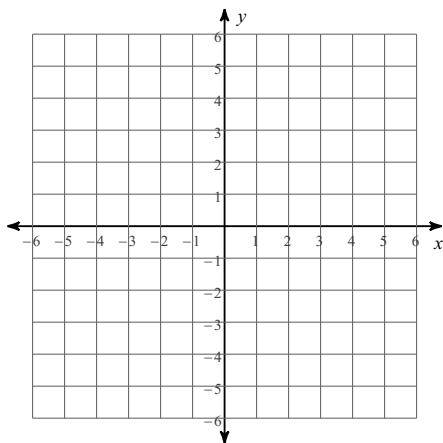
21)  $y = -3x + 2$



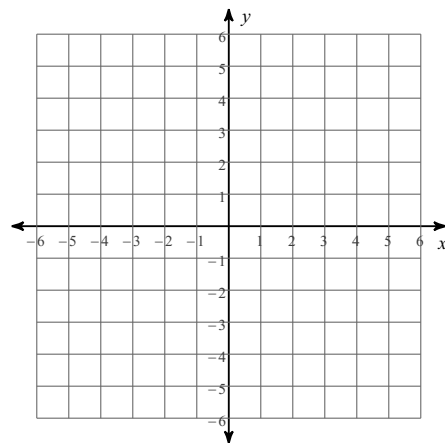
22)  $y = -2x + 5$



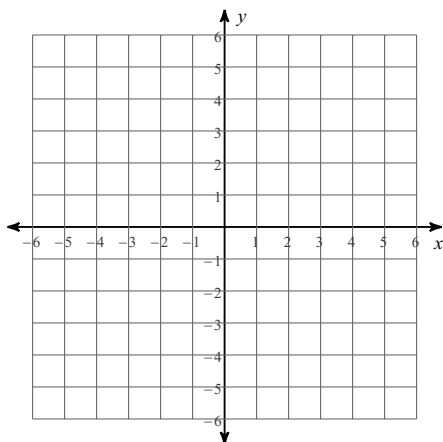
23)  $y = -9x + 4$



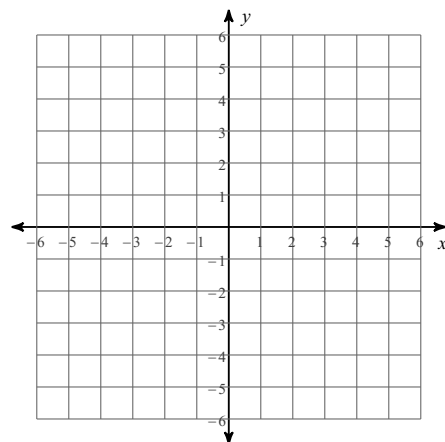
24)  $2x + y = -3$



25)  $7x - y = 4$



26)  $x + y = 0$



**Find each product.**

27)  $(5n + 4)(n - 1)$

28)  $(5r + 2)(r + 4)$

29)  $(x - 7)(7x - 6)$

30)  $(4p + 2)(5p - 4)$

**Evaluate each expression.**

31)  $(6 - 4)^2$

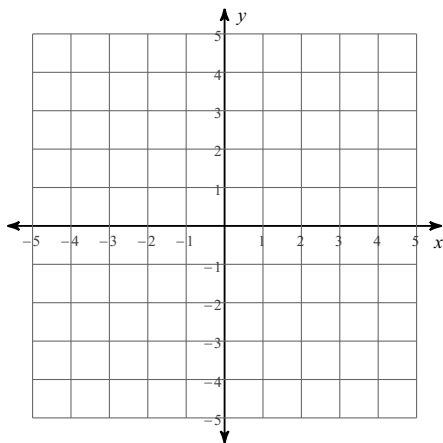
32)  $(4 - 3)^2$

33)  $6 - (3 - 2)$

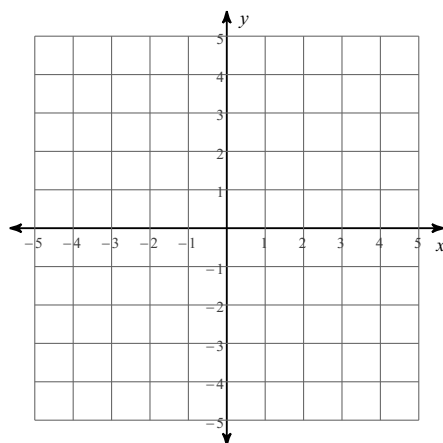
34)  $(16 - 1) \div 3$

**Solve each system by graphing.**

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



36)  $y = \frac{5}{4}x + 2$   
 $y = \frac{5}{4}x - 2$



**Solve each system by substitution.**

37)  $y = -8x + 24$   
 $-x - 3y = 20$

38)  $-7x + 5y = 0$   
 $y = -3x + 22$

39)  $x + 6y = 12$   
 $-x + 2y = -4$

40)  $7x + 2y = -24$   
 $-5x + y = 5$

**Solve each system by elimination.**

41)  $4x - 6y = 10$   
 $-6x + 6y = -24$

42)  $-x - 3y = 5$   
 $x + 4y = -4$

43)  $8x - 4y = -8$   
 $-16x + 9y = 12$

44)  $10x - 10y = 10$   
 $7x + 2y = 7$

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

45)  $21b^3 - 21b + 18$

46)  $72r^8 + 32r^7 + 72r^6$

47)  $14m^5 + 28m^3 - 7m^2 + 35m$

48)  $42k^4 - 56k^3 + 21k^2 + 70k$

**Factor each completely.**

49)  $v^2 + 7v$

50)  $n^2 + 9n + 14$

51)  $p^2 + 3p - 10$

52)  $k^2 - k - 20$

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

53)  $3b^4 \cdot 4ab^3$

54)  $3yx^4 \cdot x^4$

55)  $2y^3 \cdot 2y$

56)  $(2x^2y^4)^2$

57)  $(ab^3)^4$

58)  $(3x^4)^3$

59)  $\frac{3x^2y^3}{3x^4y^2}$

60)  $\frac{2uv}{vu^2}$

61)  $\frac{3y^4}{x^2}$