

Name _____

Period _____

Discrete Math Summer Packet

Simplify each expression.

1. $(-\frac{1}{4})^3$

2. $-|-25|$

3. $\sqrt{\frac{16}{25}}$

4. $5x^2 - x^2$

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

6. $-2(m + 1) + 9(4m - 3)$

7. $s - 4 - (s^2 - 2) - 8s$

Solve each equation.

8. $\frac{1}{3w} + 3 = \frac{2}{3}w - 5$

9. $5w \geq -6w + 11$

10. $5|2x - 7| = 20$

11. $9 \leq 6 - b < 12$

12. $8x + 7 > -3(5x - 4)$

13. $4x - 1 = 3(x + 1) + x$

Find slope.

14. $(-1,2), (0,5)$

15. $(-3,-2), (-3,2)$

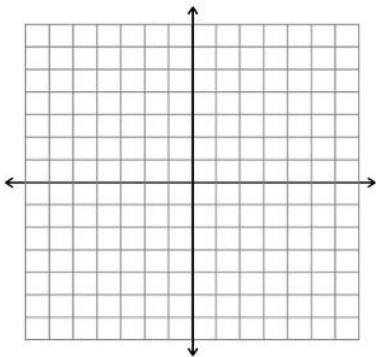
16. Write an equation of a line that is parallel to $y = 5x - 2$ and that passes through point $(2, -1)$.

17. Write an equation of a line that is perpendicular to $y = -3x + 7$ and that passes through point $(3, 5)$.

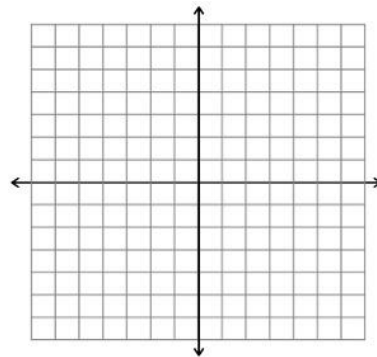
18. Write the equation of a line with slope $= -4$ that passes through point $(-1, 7)$.

Graph each line.

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



20. $2x + 4y = -8$



Simplify each expression

21. $(-3x^2)(-4x^6)$

22. $(-2pq)^3$

23. $\frac{4x^2y^5}{6xy^3}$

24. $\frac{6x^{-2}y}{18x^2y^{-1}}$

Simplify

25. $(x^2 + 6x + 11) + (3x^2 + 7x + 4)$

$$26. (44x^2 + 10x + 7) - (2x^27x + 5)$$

$$27. -8c^3(3c^2 + 2c - 9)$$

$$28. (4x - 1)(x - 8)$$

$$29. (h + 2)(3h^2 + h - 7)$$

$$30. (r + 3)^2$$

$$31. (k - 3)(k + 3)$$

Factor

$$32. x^2 - x - 30$$

$$33. x^2 - 8x + 16$$

$$34. 49x^2 - 64$$

$$35. 2x^2 + 3x - 2$$

$$36. 5x^2 + 15x + 10$$

$$37. 7h^4 - 4h^3 + 28h^2 - 16h$$

Evaluate each function rule for $x = -6$

38. $f(x) = -3x^2$

39. $h(x) = x^2 + 6x$

40. $g(x) = (x - 1)^2$

Solve by factoring

41. $x^2 + 7x + 12 = 0$

42. $5x^2 - 10x = 0$

43. $x^2 - 5x = -4$

44. $2x^2 + 5x = 3$

Solve Systems algebraically

45. $4x = y = 8$

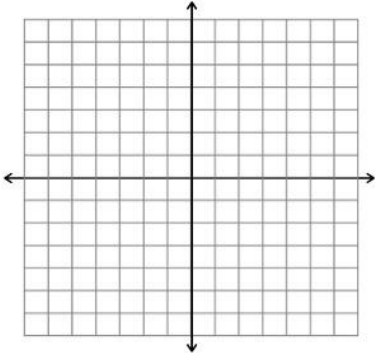
$-3x - y = 0$

46. $2x + 5y = 20$

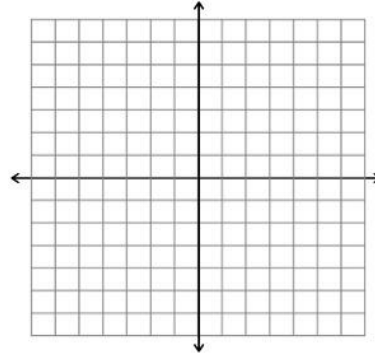
$3x - 10y = 37$

Graph

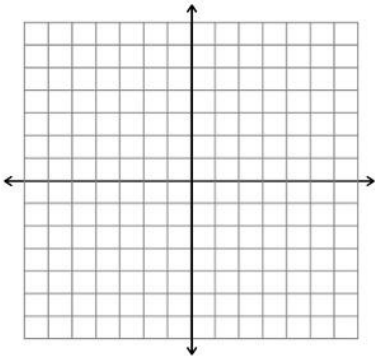
47. $y = -\frac{1}{4}(x + 2)^2 + 3$



48. $f(x) = x(x + 1)(x - 2)$



49. $y = |x + 4| - 3$



50. $f(x) = \sqrt{x - 2}$

