Name:_____   Date:_____

Villa Victoria Academy

Summer Assignment: Honors Geometry

Please show your work for each example.

Simplify.

1. $\sqrt{45}$ 　　　　　2. $\sqrt{112}$ 　　　　　3. $\sqrt{125}$ 　　　　　4. $\sqrt{117}$

5. $\sqrt{27} + \sqrt{32} + \sqrt{108}$ 　　　　6. $3\sqrt{27} + 5\sqrt{48}$ 　　　　7. $2\sqrt{20} - 3\sqrt{24} - \sqrt{180}$

Solve the following equations.

8. $\frac{1}{2}(16 - 2h) = 11$ 　　　　9. $8y - 4 = 20$ 　　　　10. $5x - (4x + 15) = 20$

Write the equation that represents the line.

11. Write the equation of the line that passes through the point (4, 2) and is parallel to $y = -3x + 1$.

12. Write the equation of the line that passes through the point (15, -4) and perpendicular to $5y - x = 10$.

13. Write the equation of the line perpendicular to the y-axis and passing through the point (5, -3) .

14. Write the equation of the line that passes through the points (-3, -4) and (2, 8).

Graph the following lines.

15. $-3x + 5y = 10$

16. $2x + 6y = 12$

Solve the quadratic equations by factoring.

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

18. $x^2 + 4x - 12 = 0$

19. $x^2 - 16 = 0$

20. $9x^2 - 36 = 0$

Solve the system of linear equations.

21. $x + y = 3 \quad and \quad 3x - 2y = 14$

22. $3x + y = 2 \quad and \quad 4x - 2y = 1$

23. $x - 3y = 3 \quad and \quad 2x + 9y = 11$

Solve the proportions.

24. $\dfrac{y}{18} = \dfrac{150}{126}$

25. $\dfrac{x-2}{3} = \dfrac{1}{x}$

26. $\dfrac{x}{72} = \dfrac{2}{3}$

Solve for the variable.

27. $5 - 2(y - 4) = 3(2y - 3)$

28. $y^2 + (y = 14)^2 = 26^2$

29. $6 - (3t + 4) = 15$

30. $7 = -2(4n - 4.5)$

31. $5k + (k + 1) = 23$

32. $-6x + 1 = 13$

Write the equation necessary to solve the problem. Then solve the problem.

33. The students sold 200 tickets for a school play. Student tickets cost $1.50 and adult tickets cost $3.00. The sale of tickets yielded $495.00. How many of each type of ticket were sold?

34. The sophomore class has 124 students. Of these students, 47 are involved in musical activities: 25 in band and 36 in choir. How many students are involved in both band *and* choir?

35. Kim took a taxi cab from her house to the train station. The cost was $14.60, which included a $2.00 tip. The cab charges $1.20 per person plus $0.20 for each fifth of a mile. How many miles away is the train station?

36. The square of a number minus twice the number is 48. What is the number?