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. $2\sqrt{20}-3\sqrt{24}-\sqrt{180}$

8. $(2\sqrt{6})^2$ 9. $(\sqrt{3y})^2$ 10. $\frac{\sqrt{81}}{27}$

Solve the following equations.

11. $\frac{1}{2}(16 - 2h) = 11$

12. $8y - 4 = 20$

13. $5x - (4x + 15) = 20$

Write the equation that represents the line.

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

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

Graph the following lines.

16. $-3x + 5y = 10$

17. $2x + 6y = 12$

Factor the following expressions.

18. $y^2 - 4$

19. $16x^2 - 1$

20. $9x^2 + 8$

Solve the quadratic equations by factoring.

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

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

Solve the system of linear equations.

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

24. $3x + y = 2 \quad and \quad 4x - 2y = 1$

Integer Review: Solve each expression.

25. $(-3)^2 - 3^2$

26. $7 - 13 - (-2 - 9)$

27. $2(8 - 6)^2$

Solve the proportions.

28. $\frac{y}{18} = \frac{150}{126}$

29. $\frac{x-2}{3} = \frac{1}{x}$

30. $\frac{x}{72} = \frac{2}{3}$

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

31. 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?

32. 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?

33. 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?

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