Northview High School

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Summer 2016

Dear incoming Honors Algebra II student,

You are currently enrolled in Honors Algebra II for the 2016-2017 school year. In order to make sure that you are prepared for the school year, independent practice over the summer to refresh Algebra 1 skills is mandatory. A review packet has been made available online on the homepage of http://www.sylvanianorthview.org and we ask that you spend time this summer working on this. The problems compiled to create the packet require skills that you should have mastered in your Algebra 1 course. Nonetheless, we are aware that you may have questions while completing the packet. We will focus our instruction during the beginning of the school year on this prerequisite material to briefly revisit the concepts and answer any unresolved questions.

Subsequently, students enrolled in Honors Algebra II will be given a test covering these prerequisite materials, to assess mastery of the fundamental skills included in the review packet. It will be used to determine necessary intervention and appropriate course placement. If the diagnostic test and/or intervention establishes that you have been misplaced, recommendations for a course transfer will be made on an individual basis.

Our current Honors Algebra II textbook is aligned with the new Common Core State Standards, therefore, does not contain any of this prerequisite Algebra I material. However, we still have our license to use online materials from our past Algebra II text. You can access many of these concepts, usually in the first three chapters. To access the online version of this text, please go to www.classzone.com, and click ***sign in*** at the top of the page. A generic account has already been established. The username is **alg2teachers** and the password is **Algebra2.**

****Expect a minimum of about 90 minutes to complete all problems. (This *does not* include time to review, watch videos, ask questions, etc.)****

If you have questions, you can email me at bkwiatkowski@sylvaniaschools.org. I will attempt to check emails periodically during the summer and respond to you accordingly.

Thank you,

Bridget Kwiatkowski
Honors Algebra II Instructor

Name _____ Date_____

Skills Test

Prerequisite Skills Test

In Exercises 1–5, solve the equation for *x*.

1. $3x^2 = 9$

2. $4x + 5 = -3$

3. $5x + 7 = 3x + 15$

4. $3(x + 2) = 2(10 - x) + 11$

5. $|3x + 4| = 8$

6. The shape of a dome can be modeled by the equation $h = -2d^2 + 100$ where h is the height (in feet) of the dome from the floor d feet from its center. How far from the center of the dome is the height 50 feet?

7. Simplify using the order of operations: $(3 + 2)^3 - 5 \times 6 - \frac{9}{3}$.

8. A cab charges \$0.10 per mile and a flat fee of \$3.00. Write an equation to model the price y of an x-mile-long cab ride.

Answers

1. _____

2. _____

3. _____

4. _____

5. _____

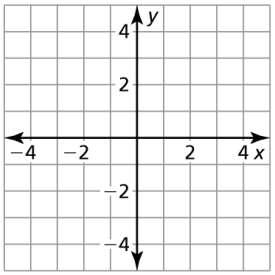
6. _____

7. _____

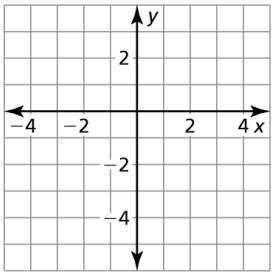
8. _____

In Exercises 9-11, graph the equation, inequality, or system of inequalities.

9. $y = -3x + 2$

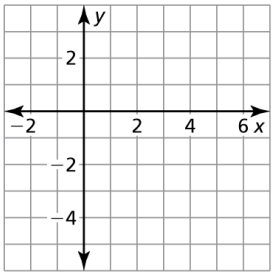


10. $y < -3|x + 1|$



11. $y > 2x - 5$

$y \geq -\frac{1}{2}x + 2$



9. See left.

10. See left.

11. See left.

12. If $f(x) = 7x^2 + 5$, compute $f(3)$.

13. On a certain day there was a near constant snowfall rate of 0.50 inch per hour. After 4 hours there were 10 inches of snow on the ground (including some from the day before). Write an equation that models the amount of snowfall in inches y after x hours.

14. You are traveling away from home at a constant speed. After 3 hours you are 60 miles from home and after 7 hours you are 160 miles from home. Write an equation that models y, your distance (in miles) from home after x hours.

15. Write an equation representing the translation of $f(x) = 7x + 3$ down 4 units.

In Exercises 16-18, solve the system using any method.

16. $y = 3x + 2$
$y = 7x - 10$

17. $3x + 2y = 8$
$y = 3x + 1$

18. $2x + 2y = 8$
$3x + y = 10$

19. Simplify $(3x^2)^5$.

20. Simplify $\dfrac{3x^4y^2}{18x^2y^7}$.

Answers

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

Name _____ Date_____

Skills Test

Prerequisite Skills Test (continued)

In Exercises 21 and 22, use the two-way table that shows the results of a blood test used to detect a certain disease for a sample of patients.

	Positive Result	Negative Result
Disease Present	103	15
Disease Not Present	17	207

Answers

21. Determine the probability that the blood test will detect the disease, if you have the disease.

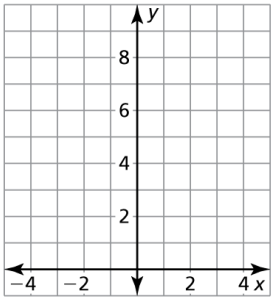
21. _____

22. What is the probability that you have the disease, if your blood test reports a positive result?

22. _____

23. Graph the equation $y = (x + 2)^2 + 5$.

23. **See left.**



24. **The scores for a physics test: 95, 90, 88, 75, 70, 92.**

Find the mean of the scores.

24. _____

25. Simplify $(3x^2 + 5x + 7) - (3x + 5x^2)$.

25. _____

26. Simplify $(x + 1)(x^2 - x + 1)$.

26. _____

27. Solve $\begin{matrix} x^2 + y = 7 \\ 3x + y = 9 \end{matrix}$ for x and y.

27. _____

Name _____ Date_____

Skills Test

Prerequisite Skills Test (continued)

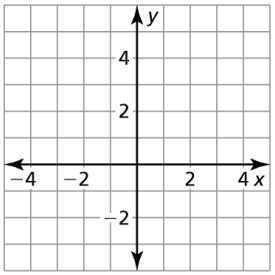
28. The length of the base of a certain rectangle is modeled by the equation $b = \sqrt{\frac{A}{5}}$ where b is the length of the base and A is the area of the rectangle. If the base of the rectangle is 8 inches, what is the area of the rectangle?

29. Solve $0 = (x + 2)^2 - 25$.

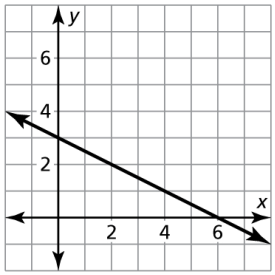
30. Solve $3x^2 + 5x - 12 = 0$.

31. A rectangular yard has a length that is 7 feet longer than its width. If the perimeter of the yard is 46 feet, what is the area of the yard?

32. Graph $y = |2x + 1|$.



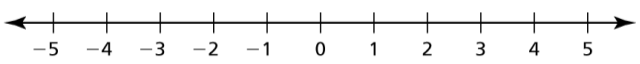
33. Write an equation of the line.



34. Consider the inequality $6 < |5x - 1|$.

a. Solve for x.

b. Graph the solution on the number line.



Answers

28. _____

29. _____

30. _____

31. _____

32. See left.

33. _____

34. **a.** _____

b. See left.