



Summer Assignment Algebra II

Directions: Show all work for the following problems, even for multiple choice. Only use a calculator when told to do so. The material on this summer assignment was learned in Algebra I. We will review this material for about a week or two upon your return to school. **Then, you will be tested on the material.**

Academic Integrity: All work should be completed independently and without the assistance of unapproved resources. Any work violating academic integrity will be subject to a “0” and any additional consequences as outlined in the Knox Academic Integrity Policy attached to this assignment.

Due Date: Your work is due the first day of your Algebra II class. All late work will be subjected to a grade reduction or penalty as outlined in the course syllabus and copied below:

All major assignments not submitted on the due date will face a 10% deduction of max points per day for up to five (5) days and up to a 50% deduction.

Summer Assignments for AP Classes that are not submitted on time will result in the student being dropped from the course.

If you have any questions or concerns regarding this assignment, please contact the Dean of Academics, Mrs. Pergola, at dpergola@knoxschool.org.

Show all work for the following problems.

#1-2, Multiple Choice-Choose the best answer.

1. The correlation coefficient is used to determine:
 - a. A specific value of the y-variable given a specific value of the x-variable
 - b. A specific value of the x-variable given a specific value of the y-variable
 - c. The strength of the relationship between the x and y variables
 - d. None of these

2. If there is a very strong correlation between two variables then the correlation coefficient must be
 - a. any value larger than 1
 - b. much smaller than 0, if the correlation is negative
 - c. much larger than 0, regardless of whether the correlation is negative or positive
 - d. None of these alternatives is correct.

Evaluate each expression based on the given values of the variables.

3. $-4y + 7y^2 + 5$; $y = -3$

4. $\frac{r^2+2r-3}{3r+1}$; $r = 5$

#5-6, Simplify completely each expression.

5. $6c(c + 3) - 2c(c + 5) + 6$

6. $4x - 5x^2 + 6(x - 3) - 8x^2$

Solve each equation. Check for extraneous solutions if needed.

7. $4(3 - 3x) - 8x = 15 - 2(5x + 8)$

8. $|12 + 4x| + 6 = 2$

9. $2|7y - 2| - 4 = 12$

Algebraically solve each inequality. **Shade answer on a number line and write answer in interval notation.**

10. $2|x - 1| + 5 \geq 13$

11. $-4|2x + 3| - 9 > -21$

12. $-\frac{2}{3}(p - 6) + 5 \geq 1$

Write an equation or inequality that can be used to solve each problem below.

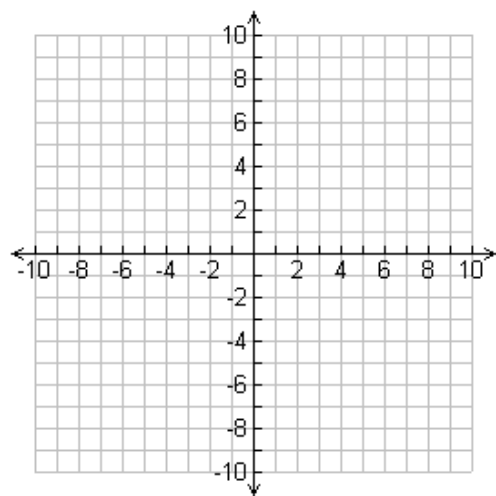
13. Three times a number increased by 8 is no more than the number decreased by 4. Find the solution.

14. A freight train leaves Los Angeles and heads towards Chicago traveling at 40 mph. Two hours later, another freight train leaves the same station and heads in the same direction traveling at 60 mph. How long does it take until the trains meet?

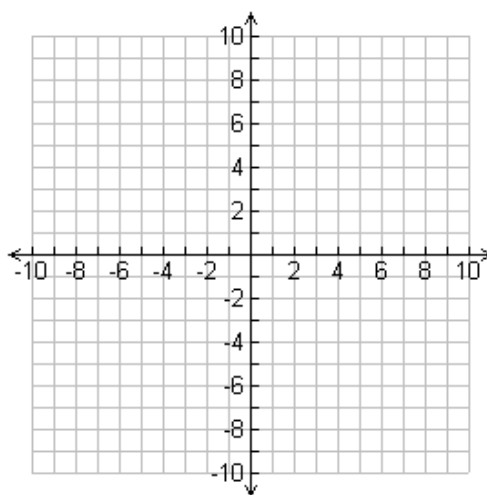
15. Pretend that you are allowed to go within 9 of the speed limit of 65mph without getting a ticket. Write an absolute value inequality that models this situation.

#16-17: Graph each equation or inequality. Shade when appropriate.

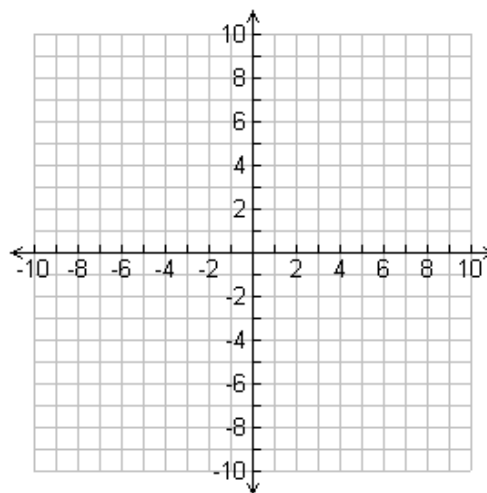
16. $y = -\frac{3}{4}x + 1$



17. $-2y = -5x - 4$



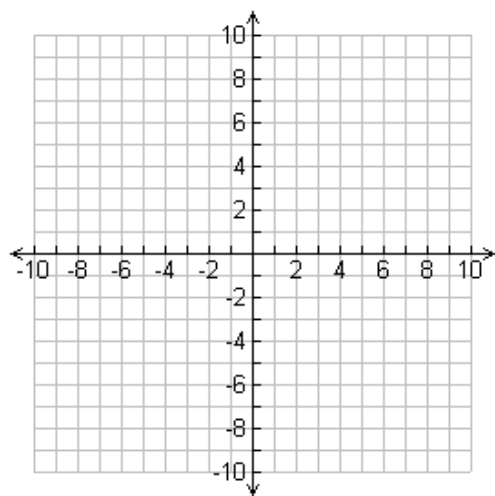
18. $y = -2$



19. Graph the following linear function by using intercepts.

$4x - 6y = 24$

x - intercept



y - intercept

20. Write the point-slope form of the line passing through the point $(3, -5)$ that's perpendicular to $-3y + 2x = 9$.

21. Write the equation of the line in **point-slope form** that passes through the points $(1, -4)$ and $(-2, 7)$.

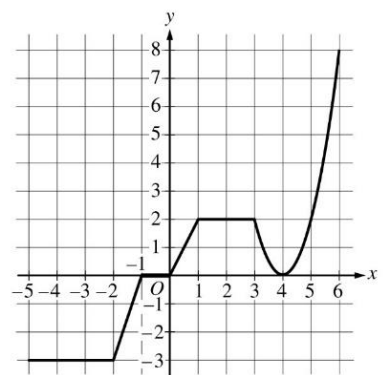
22. Find the equation of a line parallel to $5y - 3x = 10$ that passes through the point $(2, -1)$.

23. Use the graph below to find the following values.

A. $g(-2) =$

B. $g(4) =$

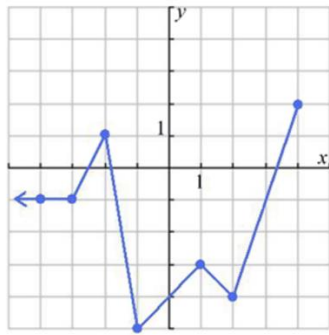
C. $g(1) =$



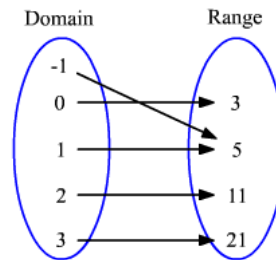
Graph of g

24. State if each relation is a function. If it is not, state why.

A.



B.



25. The following table lists the heights and masses for a group of fire department trainees. For parts A and B, round to the hundredths, if needed. Graphing calculator is required.

A. Find the equation of the regression line.

B. What is the value of the correlation coefficient

C. Describe the strength and direction of the correlation coefficient.

Height (cm)	Mass (kg)
177	91
185	88
173	82
169	79
188	87
182	85
175	79