

**Clearview Regional High School District
2017 Summer Assignment Coversheet**

Course	HONORS GEOMETRY
Teacher(s)	Monica Kelly, Tara Puitz, Karen Cumbo
Due Date	9/8/17
Grade Category/Weight for Q1	There will be a summer packet <u>quiz</u> given during the week of 9/12/17, this will count as a Minor Assessment
Common Core and/or NJ Core Curriculum Content Standards covered	<ul style="list-style-type: none"> 1) Create Equations that describe numbers or relationships. [A.CED.1] 2) Reasoning with equations and inequalities. [A.REI.1, 3, 10, 11, 12] 3) Interpreting Functions. [F.IF.4, 5, 7]
Description of Assignment	This packet is a series of algebraic problems covering skills mastered in Algebra 1. These are also problems and skills needed to be successful in Honors Geometry.
Purpose of Assignment	This packet is meant to prepare students for the course by providing practice on skills needed to be successful in Honors Geometry. This packet also serves as a study guide to the summer packet quiz.
Specific Expectations	Students are expected to attempt every problem without the use of a calculator.
Where to Locate Assignment	School District Website
Helpful Resource(s)	Email: kellymo@clearviewregional.edu for questions 1) http://www.wtamu.edu/academic/anns/mps/math/mathlab/ www.purplemath.com/ 2) www.purplemath.com/

Dear Parent and Student,

This summer packet is meant for students to practice the skills needed to be successful in Honors Geometry.

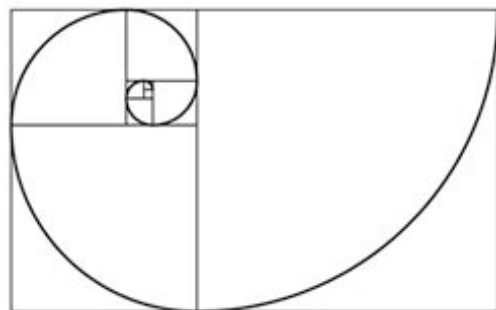
-Students are expected to attempt all the problems and attempt them without a calculator.

-There will be a quiz given in class during the 2nd or 3rd week of September that will reflect the problems and skills presented in this summer packet. **Calculators will not be permitted on the quiz.**

-Detailed solutions and explanations to the summer packet will be posted on the high school/middle school websites on **August 1st**. Students are expected to check their answers and use this summer packet as a study guide for the quiz in September.

Enjoy the summer!

-Clearview Regional School District Mathematics Department



MULTIPLYING POLYNOMIALS

$$1] (x^3 + 3)(x - 7)$$

$$2] (x - 4)(x^2 + 3x - 5)$$

$$3] (5x - 6)(-x + \frac{1}{2})$$

$$4] (\sqrt{2} + x)(\sqrt{8} - x)$$

FACTOR EACH OF THE EXPRESSIONS

$$5] y^2 - 12y + 20$$

$$6] x^3 + 3x^2 + 2x$$

$$7] z^2 - z - 6$$

$$8] 4ax^2 + 16ax + 16a$$

$$9] x^2 - 16$$

$$10] k^2 - 64w^2$$

RATIONALIZE EACH RADICAL EXPRESSION

$$11] \frac{3\sqrt{3}}{\sqrt{2}}$$

$$12] \frac{1}{\sqrt{5}}$$

$$13] \frac{12}{3\sqrt{2}}$$

$$14] \frac{xy}{\sqrt{x}}$$

SOLVE EACH SYSTEM OF EQUATIONS USING SUBSTITUTION.

$$15] \begin{cases} 2x + y = 4 \\ 3x + y = 1 \end{cases}$$

$$16] \begin{cases} y = 3x - 27 \\ y = \frac{1}{2}x - 7 \end{cases}$$

SOLVE EACH SYSTEM OF EQUATIONS USING ELIMINATION

$$17] \begin{cases} 3k + 5g = -12 \\ 2k - 3g = -8 \end{cases}$$

$$18] \begin{cases} 2k - g = 8 \\ 6k - 3g = -9 \end{cases}$$

SIMPLIFY EACH RADICAL EXPRESSION

$$19] \sqrt{124}$$

$$20] \sqrt{215}$$

$$21] \sqrt{20x^2}$$

$$22] \sqrt{12} \cdot \sqrt{48}$$

$$23] \sqrt{32} + \sqrt{54} - \sqrt{98}$$

EVALUATE EACH OF THE EXPRESSIONS WITHOUT THE USE OF A CALCULATOR

24] $45 - [3(5 - 3)]$

25] $(9^2 + 4 \cdot 9 \div 4 - 6) \div 3$

26] What does $2x^2 + 3x - 4$ equal when $x = -3$?

27] $-21 - (-0.8)$

28] $-0.8 - (-1.1)$

29] $\frac{15}{16} - \frac{7}{20}$

30] $13 - (-2)$

31] $(1\frac{1}{5})(4\frac{1}{2})$

32] $(7.3)(-12.1)$

33] $-21.07 \div (-4.3)$

34] $(5\frac{1}{3}) \div (3\frac{1}{5})$

35] $\frac{3}{10} + \frac{1}{4}$

36] $\frac{10}{33} \cdot \frac{9}{50}$

37] 0.35×0.3

SOLVE EACH LINEAR EQUATION BELOW FOR 'X'

$$38] 3(2x - 5) - 1 = -2(x + 4)$$

$$39] \frac{4x + 2}{3} = 5x - 1$$

$$40] \frac{t + x - p}{m} = y$$

$$41] 2x - 12y = 10$$

$$42] \frac{3}{2}x - 3 = \frac{3}{4}$$

EVALUATE EACH EXPRESSION WITHOUT A CALCULATOR. LEAVE ALL FINAL ANSWERS IN *SIMPLEST* FORM.

$$43] \frac{2}{3} + \frac{3}{4} + \frac{5}{6}$$

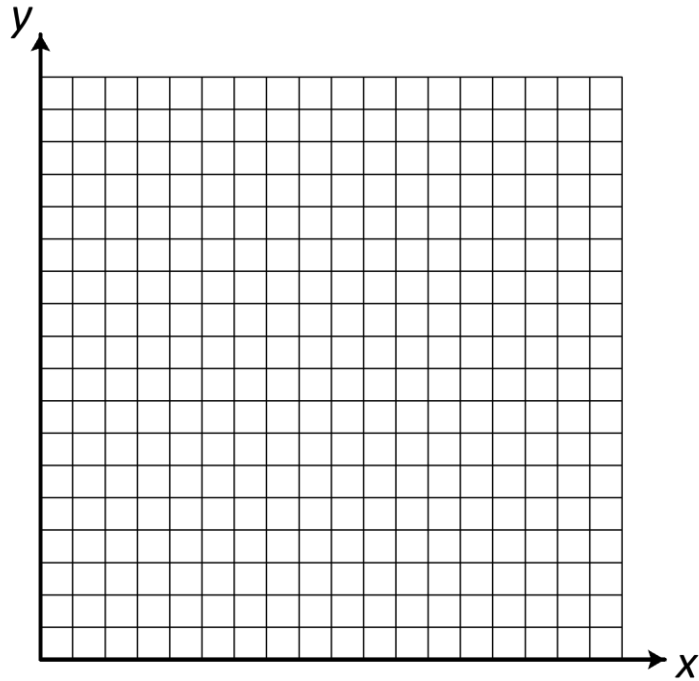
$$44] \frac{2x}{3} + \frac{3x}{8}$$

$$45] \left(\frac{4}{3} \times 9\right) \div \left(\frac{3}{4} \times \frac{8}{9}\right)$$

$$46] \left(\frac{mt}{p}\right) \left(\frac{pt}{m}\right)$$

USE THE DISTANCE AND MIDPOINT FORMULAS TO ANSWER THE FOLLOWING QUESTIONS

**A rectangle has vertices located at A(2,1) B(0,1) C(0,16) and D(2,16)
Graph the rectangle on the grid provided.**



47] What is the horizontal width of the rectangle from A to B?

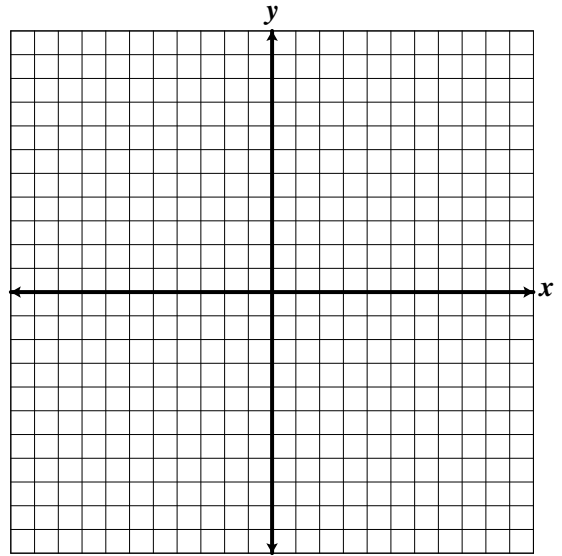
48] What is the length of a diagonal from A to C?

49] What are the coordinates of the point midway between A and C?

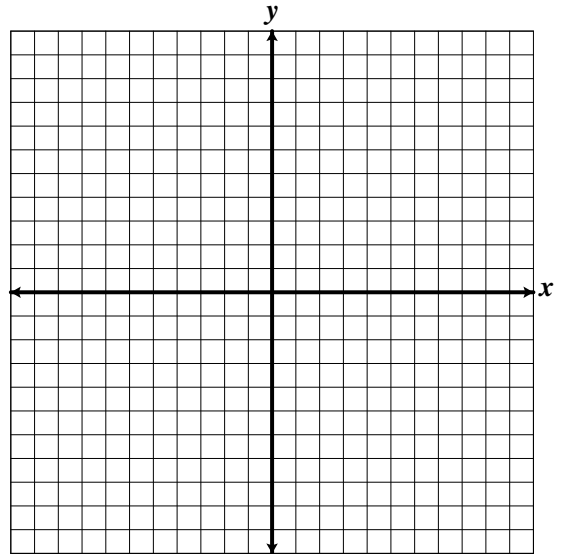
50] What is the slope of a line perpendicular to diagonal \overline{AC} ?

GRAPH EACH LINEAR EQUATION ON THE COORDINATE PLANES PROVIDED.

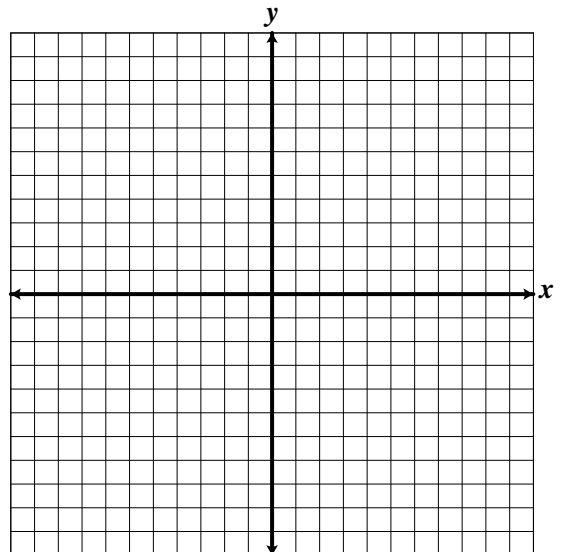
51] $2x + 5y = 10$



52] $\frac{x}{4} - \frac{y}{3} = 2$



53] $4y = 16 + 2x$



WRITE THE EQUATION OF THE LINE FROM THE GIVEN INFORMATION.

54] Write an equation in slope-intercept form of the line passing through (0,1) and is perpendicular to the line $2x + 4 = y$.

55] Write an equation in slope-intercept form of the line passing through (-9,5) and is perpendicular to the line $y = -3x + 2$.

56] Write an equation in slope-intercept form of the line passing through (4,6) and is parallel to the line $y = \frac{2}{3}x + \frac{10}{3}$.

57] Write an equation in slope-intercept form of the line that passes through (2,5) and has slope = -3.

FOR #58-60 DETERMINE IF THE PAIR OF LINES ARE PARALLEL, PERPENDICULAR, OR NEITHER.

$$58] \begin{aligned} y &= 2x + 5 \\ y &= -2x + 4 \end{aligned}$$

$$59] \begin{aligned} 2y + 3x &= 5 \\ 3y &= 2x - 7 \end{aligned}$$

$$60] \begin{aligned} x &= 3y + 2 \\ y &= \frac{1}{3}x - 3 \end{aligned}$$

FOR EACH PROBLEM BELOW, THE SLOPE OF A LINE IS GIVEN. DETERMINE THE SLOPE OF THE PERPENDICULAR LINE.

$$61] m = 3/5$$

$$62] m = -6$$

$$63] m = -1/11$$

$$64] m = -\sqrt{2}$$

SOME HINTS: These are just a few hints, please utilize online resources for help if necessary.

A) MULTIPLYING POLYNOMIALS BY THE FOIL METHOD:

$$\begin{array}{c}
 \begin{array}{ccc}
 & \text{F} & \text{L} \\
 \text{---} & \text{---} & \text{---} \\
 (5x - 3) & (4x + 1) & \\
 \text{---} & \text{---} & \text{---} \\
 & \text{O} & \\
 \text{---} & \text{---} & \text{---}
 \end{array} \\
 \\
 20x^2 + 5x - 12x - 3 \\
 \text{F} \quad \text{O} \quad \text{I} \quad \text{L} \\
 \\
 20x^2 - 7x - 3
 \end{array}$$

B) RATIONALIZE THE DENOMINATOR

- 1) Multiply the “top” and bottom by the square root in the denominator.
- 2) Simplify the numerator if necessary. The denominator will become the square root of a perfect square.
- 3) Reduce the fraction if necessary.

$$\begin{array}{c}
 \frac{5}{\sqrt{10}} \\
 \swarrow \quad \searrow \\
 \frac{5}{\sqrt{10}} = \frac{5}{\sqrt{10}} \cdot \frac{\sqrt{10}}{\sqrt{10}} = \frac{5\sqrt{10}}{\sqrt{100}} = \frac{5\sqrt{10}}{10} = \frac{\sqrt{10}}{2} \\
 \text{Reduce: } \frac{5}{10} = \frac{1}{2}
 \end{array}$$

C) SIMPLIFYING RADICALS

This is just 7

$$\sqrt{98} = \sqrt{7 \cdot 7 \cdot 2} = 7\sqrt{2}$$

$$\begin{array}{c}
 \swarrow \quad \searrow \\
 49 \quad 2 \\
 \swarrow \quad \searrow \\
 7 \quad 7
 \end{array}$$