NORWALK HIGH SCHOOL
HONORS GEOMETRY
2020-2021

Welcome to Norwalk High School!

Honors Geometry is a rigorous course that requires the use of Algebra 1 skills. The summer work is designed to maintain and reinforce these prerequisite skills in preparation for the upcoming school year.

The summer packet:

- Is **due on the first day** of class
- Must be completed in **pencil only**
- Must show all necessary work
- Material will be tested **on the first day of class**

> Please use my **google site** to print a copy of the summer packet and for resource suggestions and videos.
>
> Click the link below or scan the QR code.
>
> https://sites.google.com/norwalkps.org/mrscosgrove-nhs/home

For the 2019-2020 school year, you will be required to bring the following supplies to class every day:

- TI-84 Plus or TI-84 CE graphing calculator
- $1\frac{1}{2}$ inch 3-ring binder (dividers optional)
- Pencils (#2 or mechanical)
- Loose leaf paper
- Color pencils

Please have your parent/guardian read and sign this form as well. The signatures below will indicate to your teacher that you have read and understand our expectation of you upon entering this class.

Student Name (Print)_____ Student Signature_____

Parent/Guardian Signature_____ Date_____

Order of Operations and Simplifying Expressions: (*MUST SHOW ALL WORK*)

Simplify the expressions <u>without</u> a calculator.

1) $\dfrac{(-5)(-2)-4}{-4\left(\frac{1}{3}\right)}$

2) $\dfrac{\frac{4}{5}}{2-\frac{1}{3}}$

3) $6(3x^3 - 4x + 4)$

4) $9 - 4(3x - y)$

5) $(2x - 5)^2$

6) $(3x^2 - 8x + 9) - (x^3 + x^2 + 4)$

7) $6m(n - 2m) - 3n(2m - 4n)$

8) $(-x^2y)^3(2x^3y^2)^2$

9) $\dfrac{14x^2 + 42x - 7}{7}$

Solving Linear Equations and Inequalities: (*MUST SHOW ALL WORK*)

Solve the following equations <u>without</u> a calculator.

1) $11 = 3x + 5$

2) $-9 = -5 + \frac{x}{4}$

3) $x - \frac{3}{5} = -\frac{7}{10}$

4) $75 = 3(-6n - 5)$

5) $-16 + 5n = -\frac{1}{2}(-6 + 8n) + 3$

6) $-4x + 2(5x - 6) = -3x - 39$

7) $\frac{x+4}{2} = 17$

8) $\frac{2x+6}{x} = \frac{7}{2}$

9) $\frac{-4}{2x-9} = \frac{-16}{3x+14}$

10) $8x - 15 < 73$

11) $-3(2x - 5) + 1 \geq 4$

12) $5x + 12 < 11x + 18$

Linear Functions: (*MUST SHOW ALL WORK*)

Part 1: *Find the slope between the two points <u>without</u> a calculator.*

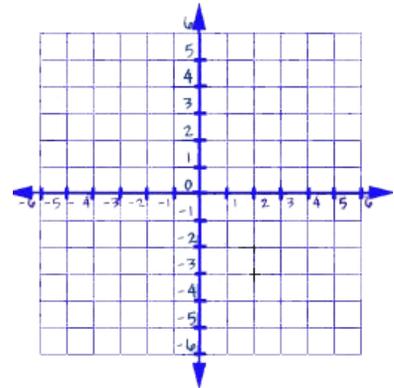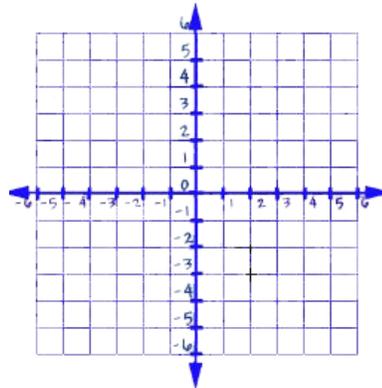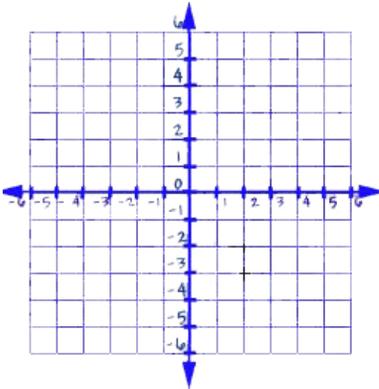1) $(-4, 4)$ *and* $(-6, 2)$ 2) $(10, -5)$ *and* $(-2, 1)$ 3) $(7, 3)$ *and* $(7, 6)$ 4) $(-1, 9)$ *and* $(-1, 8)$

Part 2: *Graph the lines on the coordinate plane.*

1) $y = 3x - 1$

2) $y = -\frac{1}{2}x + 5$

3) $2x - 3y = -6$

Part 1: *Write the equation of the line given the following criteria.*

1) passing through the points $(-3, -3)$ *and* $(-1, 2)$ 2) standard form of a line with slope of $-\frac{4}{3}$ and a y-intercept of -2.

3) standard form of a line parallel to $3x - 4y = 3$ and passing through $(-2, 1)$

4) perpendicular to $x - 4y = 8$ and passing through $(1, 1)$

Linear Systems: (*MUST SHOW ALL WORK*)

Solve the following linear systems.

1) $\begin{aligned} 6x - 7y &= -13 \\ y &= -2x - 1 \end{aligned}$

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

3) $\begin{aligned} 5x - 2y &= 1 \\ 5y &= 47 + 4x \end{aligned}$

4) Tickets to a concert are $12 for students and $15 for adults. A total of 300 tickets are sold, and the total receipts were $4140. How many of each kind of ticket were sold?

5) The length of a rectangular garden is three times the width. If the perimeter is 32 meters, what are the dimensions of the garden?

Other Word Problems: (MUST SHOW ALL WORK*)
Solve using one variable.

1) The width of a certain rectangle is 2 meters greater than half the length. Four times its length is 26 meters greater than its perimeter. What are the dimensions of the rectangle?

Statistics: *(MUST SHOW ALL WORK)*
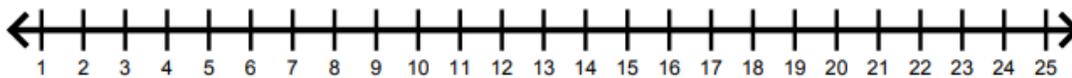
Solve the following problems.

1) The scores from last week's geometry test are:

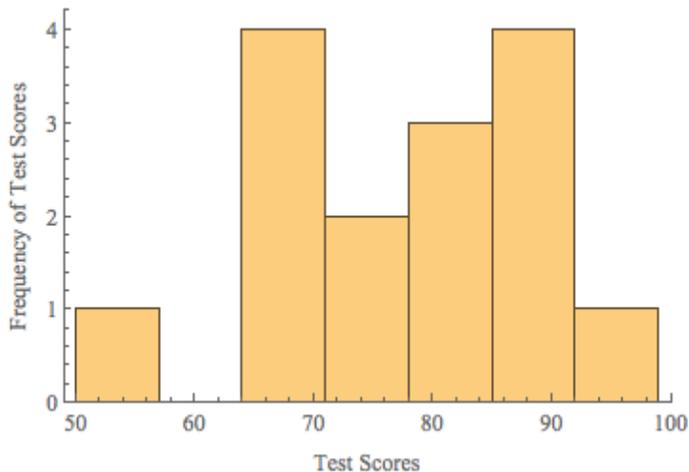90, 94, 53, 68, 79, 84, 87, 72, 70, 69, 65, 89, 85, 83, 72

a) Find the mean.   b) Find the mode.   c) Find the median.   D) Find the range.

2) Draw a box and whisker plot for the following data: 2, 3, 5, 8, 10, 12, 15, 17, 21

Minimum:_____   Maximum:_____ Q_1: _____ Q_2: _____ Q_3: _____

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

3) This histogram represents the scores from the last geometry test. They are graphed with a bin width of 7.

a) How many students took the test?

b) What percentage of students scored above 78?

c) Which interval contains the median?

4) If you draw a card from a standard deck of cards, what is the probability of *not* drawing a spade?