

**Notre Dame High School**

**220 Jefferson Street  
Fairfield, CT 06825**

**June 2015**

Dear Parent(s)/Guardian(s) and Honors Geometry Students,

Mathematics is the gateway to all college and career opportunities. As stated by the National Research Council:

“Students today are growing up in a world permeated by mathematics. The technologies used in homes, schools, and the workplace are all built on mathematical knowledge. Many educational opportunities and good jobs require high levels of mathematical expertise.”

In an effort to keep our mathematics students ready for their sophomore year all Geometry students are required to complete the enclosed Summer 2015 Math packet. We find that during the summer many of the concepts that were taught in the previous year's math class are "forgotten" over the summer and will have to be reviewed at the beginning of the school year. The problems in this packet will review key math skills from previous math courses, and will better prepare students for the new concepts of Geometry.

Summer Packet Guidelines:

**No calculators are to be used to solve problems.**

- All work must be done in pencil and shown under each problem.
- Summer packets for Geometry classes are due Wednesday, September 2, 2015.
- After reviewing packets, the teachers of these classes will know which preliminary skills need to be reviewed with the students.

The teachers of the Mathematics Department are available after school for extra help. I encourage all students to take advantage of working with their own teacher so the teacher can fully assess their knowledge of mathematics.

Please feel free to email me with any concerns or questions over the summer. I will be doing day trips during the summer but will get back to you within a few days of your email. You may reach me at: [szembrzuski@notredame.org](mailto:szembrzuski@notredame.org) In the subject area indicate if it is a Geometry question. I wish everyone an enjoyable summer and look forward to seeing everyone at the end of August.

Sherrie Zembrzuski  
Math Department Chairperson

SOMMER MATH PACKET  
NOTRE DAME HIGH SCHOOL  
GEOMETRY  
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**The examples on the following pages are to be completed and handed into your teacher on Wednesday, September 2, 2015. This will aid the teachers of these classes to give focus to mathematical concepts that will be necessary for this class.**

**Name** \_\_\_\_\_

**USE ORDER OF OPERATIONS TO SIMPLIFY EACH OF THE FOLLOWING. SHOW ALL WORK.**

1).  $20 - [(100 \div 25)] 2 =$

2).  $25 + 15 \cdot 5 \div 25 =$

3).  $2[(16 \div 8) + 2] + 4 =$

4).  $[3(7 - 2)] \div (9 - 6) =$

**EVALUATE EACH OF THE FOLLOWING. SHOW ALL WORK.**

5).  $11 + 3x - 5y$  when  $x = 1$  and  $y = 2$

6).  $(2y)^2 - x^2$  when  $x = 3$  and  $y = 2$

7).  $(7x - 8)^2$  when  $x = 2$

8).  $3x + 5$  if  $x = 4$

**DETERMINE WHETHER THE GIVEN NUMBER IS A SOLUTION OF THE EQUATION OR INEQUALITY. SHOW ALL WORK.**

9).  $4x + 2 = 10 ; 1$

10).  $2x + 1 > 10 ; 6$

**TRANSLATE EACH OF THE FOLLOWING INTO AN ALGEBRAIC EXPRESSION:**

11). Two more than the product of four and a number. \_\_\_\_\_

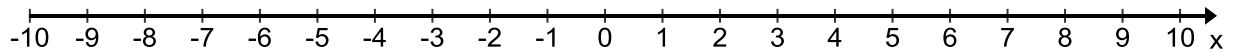
12). The difference of seven and a number. \_\_\_\_\_

**TRANSLATE THE FOLLOWING INTO EQUATIONS:**

13). The difference of a number  $a$  and two is eight. \_\_\_\_\_

14). Fifteen is one less than the product of four and a number  $x$ . \_\_\_\_\_

16). Graph the set  $\{0, 5, 8, -7\}$  on the number line below.



17). Use exponents to rewrite:  $3 \cdot 3 \cdot 3 \cdot 3 \cdot (x - 2) \cdot (x - 2) =$  \_\_\_\_\_

**COMPLETE EACH OF THE FOLLOWING:**

18).  $27 + 43 + (-14) + 11 + (-57) + 5 + (-36) + (-14) =$  \_\_\_\_\_

19).  $52 - 312 =$  \_\_\_\_\_

20).  $-27 - 56 =$  \_\_\_\_\_

21).  $-6 - 19 + 4 - 8 - (-20) =$  \_\_\_\_\_

22).  $(-28)(-3) =$  \_\_\_\_\_

23).  $(-4)(25)(-2)(-3) =$  \_\_\_\_\_

24).  $30\left(\frac{1}{6} + \frac{1}{3}\right) =$  \_\_\_\_\_

25).  $-2(-r - 5s) =$  \_\_\_\_\_

26).  $8a + 7 + 5a + 6 =$  \_\_\_\_\_

27).  $(-60a) \div (10) =$  \_\_\_\_\_

28).  $(-18m) \div (-6) =$  \_\_\_\_\_

29).  $\left(\frac{2}{3}\right)\left(\frac{-15}{6}\right) =$  \_\_\_\_\_

30).  $\left(\frac{4}{5}\right) \div \left(\frac{-8}{9}\right) =$  \_\_\_\_\_

**SIMPLIFY EACH OF THE FOLLOWING. SHOW ALL WORK.**

31).  $9(r + 3) + 7 =$

32).  $-2(q + 2w) - 7(3w - 4q) =$

33). **EVALUATE:**  $a - c - (a - b)$  if  $a = -3$ ,  $b = -1$ ,  $c = 2$  and  $d = 6$

34). **EVALUATE:**  $\frac{a-2d}{3c+b}$  if  $a = -3$ ,  $b = -1$ ,  $c = 2$  and  $d = 6$

**SOLVE EACH OF THE FOLLOWING. SHOW ALL WORK.**

35).  $12x + 19 = 3$

36).  $9 = 3 - \frac{2}{7}x$

37).  $12x - 2(4x - 6) = 28$

38).  $4 - 3a = 7 - 2(2a + 5)$

39).  $2a - 5 = \frac{1}{4}(16a + 40)$

40).  $x + 3(4x - 2) = 7x - 1$

41).  $\frac{3}{8}x = -15$

42).  $8(3x - 7) = 4(x + 21)$

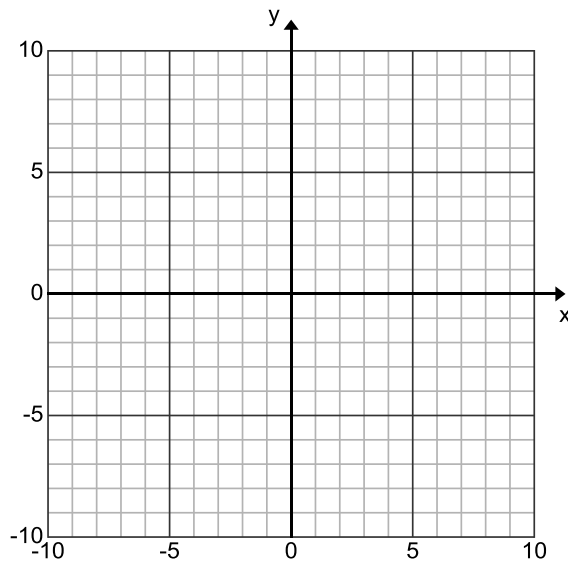
43). **FOR THE FOLLOWING, CLEAR THE EQUATION OF ALL DECIMALS THEN SOLVE. ALL ANSWERS SHOULD BE ROUNDED TO TWO DECIMAL PLACES.**

$$3.58 = 3.5686 + 0.076x$$

44). **SOLVE THE FOLLOWING EQUATION FOR Y:**

$$x - 3y = 9$$

45). **GRAPH THE LINE  $y = 4x - 8$  BY FINDING THREE POINTS ON THE LINE.**

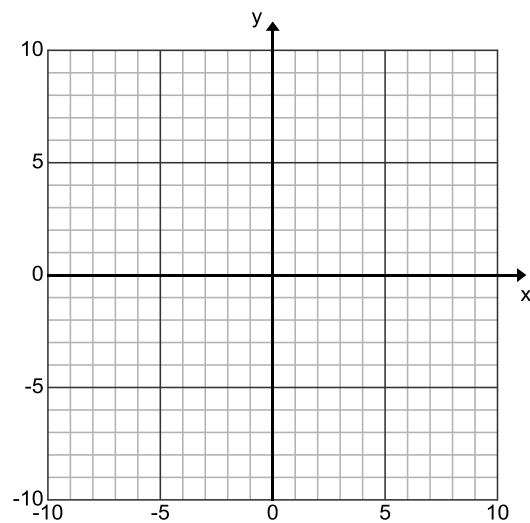


46). **DETERMINE THE SLOPE OF THE LINE THAT PASSES THROUGH THE POINTS  $(-5,2)$  AND  $(2,-4)$**

47). **THE EQUATION OF A LINE IS  $-4x + 3y = -12$ . DETERMINE THE X-INTERCEPT AND THE Y-INTERCEPT OF THE LINE THEN GRAPH THE LINE USING THESE TWO POINTS.**

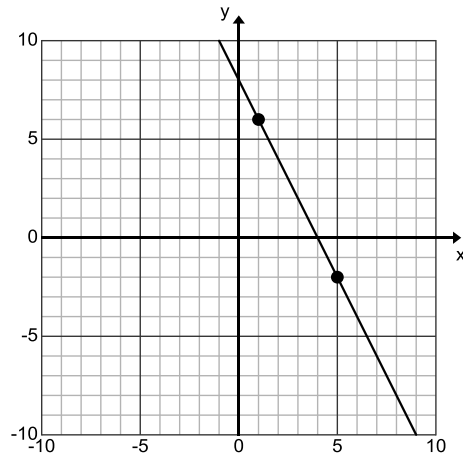
x-intercept = \_\_\_\_\_

y-intercept = \_\_\_\_\_

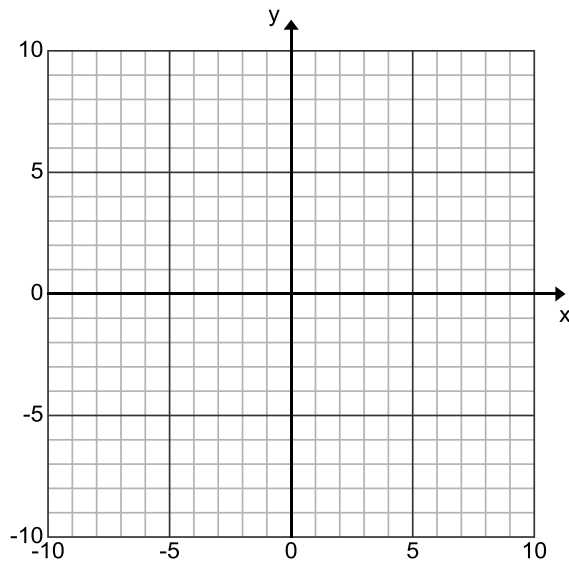


48). USE THE GRAPH TO THE RIGHT TO DETERMINE THE SLOPE OF THE LINE BELOW.

slope = \_\_\_\_\_

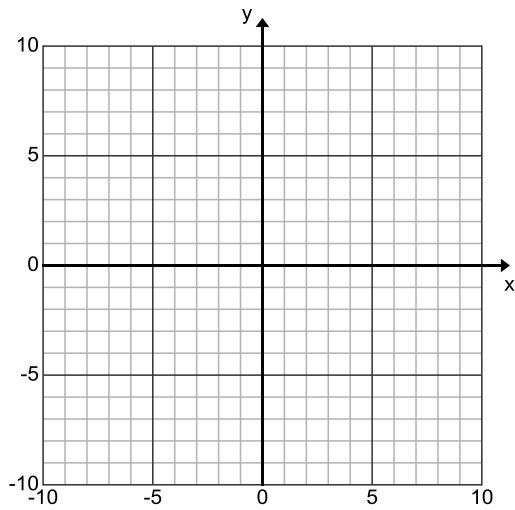


49). SKETCH THE LINE THAT PASSES THROUGH THE POINT  $(-2, -4)$  AND HAS A SLOPE OF  $\frac{6}{5}$



50). **WRITE THE EQUATION  $2x + 6y = -12$  IN THE SLOPE – INTERCEPT FORM THEN USE THE GRAPH TO SKETCH THE LINE.**

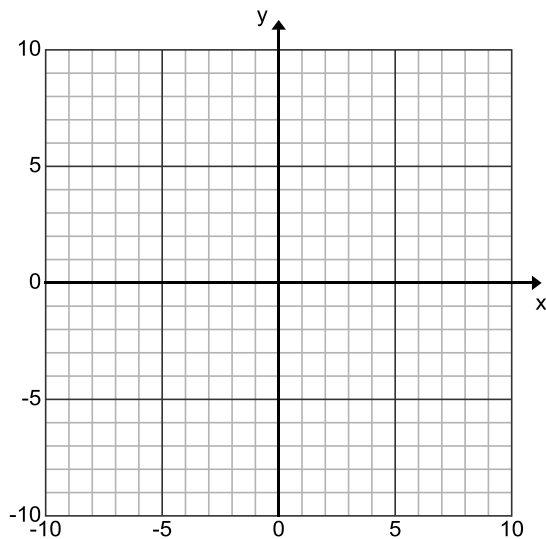
Slope-intercept form \_\_\_\_\_



51). **SOLVE THE FOLLOWING:**

$$|x - 7| - 4 = 3$$

52). **SKETCH THE GRAPH OF  $y = |x + 3| - 6$**



**FOR EACH OF THE FOLLOWING WRITE THE EQUATION OF THE LINE IN SLOPE INTERCEPT FORM**

53). The slope is 2 and the y-intercept is 3.

54). Through (2,4) and  $m = 3$

55). Through (2,3) and (6,11)

**USE THE POINT SLOPE FORM TO WRITE THE EQUATION OF THE FOLLOWING LINE IN BOTH SLOPE-INTERCEPT AND STANDARD FORM.**

56). The line that goes through (2,5) and  $m = 3$

Point-slope form \_\_\_\_\_

Slope-intercept form \_\_\_\_\_

Standard form \_\_\_\_\_