

**Notre Dame High School**

**220 Jefferson Street**

**Fairfield, CT 06825**

**June 2022**

Dear Parent(s)/Guardian(s) and Incoming Honors and High Honors Algebra I 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 build a strong foundation for high school math skills and to improve student success in Algebra, all High Honors and Honors Algebra I students are required to complete the enclosed Summer2022 Math packet. The problems in this packet will review key math skills from previous math courses, and will better prepare students for the new concepts of Algebra I .

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 High Honors and Honors Algebra I are due Friday, September 2, 2022
- 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.

Calculators are not required in our Algebra I classes however they are used in higher level math classes. If you would like to purchase a calculator for your child I would suggest the TI-84 Plus CE. The best sales for these calculators are usually in August. Normally they are in the vicinity of \$135.00 but I have seen them for \$85.00 in Target and Staples. You may also want to check Amazon since they also run specials.

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 that it is an Algebra I question.

Sherrie Zembrzuski

Math Department Chairperson

SUMMER MATH PACKET  
NOTRE DAME HIGH SCHOOL  
ALGEBRA I

HHH



**The examples on the following pages are to be completed and handed into your teacher on Friday, September 2, 2022. This will aid the teachers of these classes to give focus to mathematical concepts that will be necessary for this class.**

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

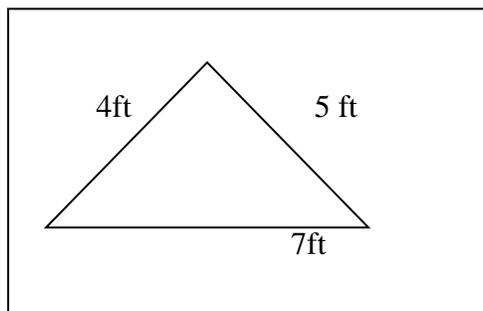
Name \_\_\_\_\_

FIGURE	PERIMETER	AREA
Square	$P = 4s$	$A = s^2$
Rectangle	$P = 2l + 2w$	$A = lw$
Scalene triangle	$P = a + b + c$	$A = \frac{1}{2}bh$
Isosceles triangle	$P = 2a + b$	$A = \frac{1}{2}bh$
Equilateral triangle	$P = 3a$	$A = \frac{1}{2}bh$
Circle	$C = 2\pi r$	$A = \pi r^2$

1). Find the perimeter of a rectangle whose length is 8 m and width is 4 m.  $P =$  \_\_\_\_\_

2). What is the area of the above rectangle?  $A =$  \_\_\_\_\_

3). Find the perimeter of the figure below?  $P =$  \_\_\_\_\_



4). Find the circumference of a circle whose radius is 6 meters.  $C =$  \_\_\_\_\_

5). Find the perimeter and area of a square whose side is 10 ft.  $P =$  \_\_\_\_\_  $A =$  \_\_\_\_\_

6). Find the area of a circle whose diameter is 16 cm. Keep  $\pi$  in your answer.  $A =$  \_\_\_\_\_

**Round each number to the given place value:**

7). 3849 to the nearest ten. \_\_\_\_\_ 8). 30,567 to the nearest thousand \_\_\_\_\_

9).  $16\frac{3}{4}$  to the nearest whole number. \_\_\_\_\_ 10). 0.439 to the nearest tenth. \_\_\_\_\_

**Complete the following. Do not use a calculator:**

11).  $14.2 + 16.9 =$  \_\_\_\_\_ 12).  $15.486 - 6.37 =$  \_\_\_\_\_

13).  $178 - 1.493 =$  \_\_\_\_\_ 14).  $5.785 + 0.215 =$  \_\_\_\_\_

15).  $(2.3)(1.8) =$  \_\_\_\_\_ 16).  $\frac{0.1}{0.8} =$  \_\_\_\_\_

17).  $0.67 \times 0.43 =$  \_\_\_\_\_ 18).  $51.98 \div 11.3 =$  \_\_\_\_\_

**A prime number is a number that is divisible by 1 and itself. So if you are asked to give the prime factorization of 48 it would be  $2^4 \cdot 3$**

**Give the prime factorization of the following:**

19). 80 \_\_\_\_\_ 20). 225 \_\_\_\_\_

**The greatest common factor (GCF) of two or more numbers is the greatest(largest) number that is a factor of the numbers involved. For example the GCF of 45 and 81 is 9 even though 1 and 3 are also factors. The GCF should be the largest number that divides into the numbers.**

**Find the GCF of each of the following”**

21). 64 and 20 GCF = \_\_\_\_\_ 22). 12, 18 and 60 GCF = \_\_\_\_\_

**The least common multiple (LCM) is the least (smallest) whole number that is a multiple of the number. For example the LCM of 8 and 12 is 24. 24 is the smallest number that both 8 and 12 will divide evenly into.**

**Find the LCM of each of the following:**

23). 4 and 20 LCM = \_\_\_\_\_ 24). 15 and 25 LCM = \_\_\_\_\_

**Equivalent fractions are fractions that represent the same quantities. For example  $\frac{3}{6} = \frac{12}{24} = \frac{1}{2}$  are equivalent because they represent the same quantity.**

**For each of the following, write two equivalent fractions.**

25).  $\frac{3}{5}$  \_\_\_\_\_ and \_\_\_\_\_ 26).  $\frac{20}{30}$  \_\_\_\_\_ and \_\_\_\_\_

**Reduce each of the following to simplest form:**

27).  $\frac{24}{28} =$  \_\_\_\_\_

28).  $\frac{63}{72} =$  \_\_\_\_\_

**Write each of the following fractions as decimals:**

29).  $\frac{5}{8} =$  \_\_\_\_\_

30).  $\frac{6}{25} =$  \_\_\_\_\_

**Write each of the following decimals as fractions:**

31).  $0.8 =$  \_\_\_\_\_

32).  $0.125 =$  \_\_\_\_\_

**Write each percent as a decimal.**

33).  $6.25\% =$  \_\_\_\_\_

34).  $225\% =$  \_\_\_\_\_

**Write each decimal as a percent**

35).  $0.86 =$  \_\_\_\_\_

36).  $1.43 =$  \_\_\_\_\_

**Complete the following additions, subtractions, multiplications or divisions. Write your answers as a fraction in lowest form.**

37).  $\frac{3}{8} + \frac{1}{4} =$  \_\_\_\_\_

38).  $\frac{11}{12} + \frac{5}{8} =$  \_\_\_\_\_

39).  $\frac{13}{17} - \frac{2}{3} =$  \_\_\_\_\_

40).  $\frac{8}{9} - \frac{4}{5} =$  \_\_\_\_\_

41).  $\frac{1}{5} \times \frac{3}{5} =$  \_\_\_\_\_

42).  $\frac{4}{9} \times \frac{3}{16} =$  \_\_\_\_\_

43).  $\frac{8}{9} \div \frac{5}{9} =$  \_\_\_\_\_

44).  $\frac{9}{10} \div 3 =$  \_\_\_\_\_

**EVALUATE EACH OF THE FOLLOWING:**

45).  $(3x + 1)x$  when  $x = 3$

46)  $x \div (2y + 1)$  when  $x = 21$  and  $y = 1$

**WRITE EACH OF THE FOLLOWING AS A MATHEMATICAL EXPRESSION:**

47). Nine more than twice n \_\_\_\_\_

48). Two less than x divided by 3 \_\_\_\_\_

**SIMPLIFY EACH OF THE FOLLOWING:**

49).  $34 + (-21) =$  \_\_\_\_\_

50). Evaluate  $x + (-9)$  for  $x = 35 =$  \_\_\_\_\_

51).  $-5 - (-8) =$  \_\_\_\_\_

52).  $-8 \cdot 9 =$  \_\_\_\_\_

53).  $-48 \div 8 =$  \_\_\_\_\_

54). Evaluate  $k \div (-11)$  for  $k = -33 =$  \_\_\_\_\_

55).  $6\frac{2}{7} \div \frac{3}{4} =$  \_\_\_\_\_

56).  $0 \div 5.928 =$  \_\_\_\_\_

57).  $9^3 =$  \_\_\_\_\_

58).  $(-4)^2 =$  \_\_\_\_\_

59).  $(\frac{5}{6})^2 =$  \_\_\_\_\_

60).  $\sqrt{196} =$  \_\_\_\_\_

61).  $8 + 3[3 - (1)^6] =$

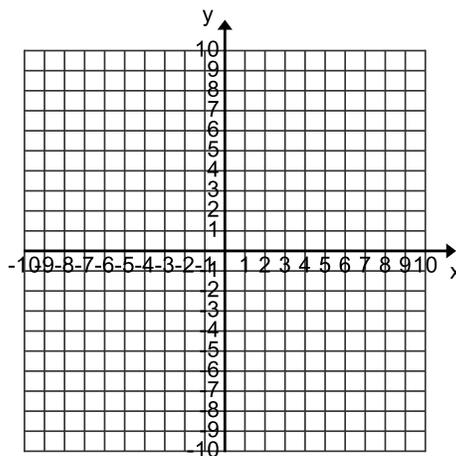
62).  $3^4 + 12 \div 3 - (1 - 9) =$

63). Simplify:  $\frac{2+4^2}{2} + |1-6|$

64). SIMPLIFY BY COMBINING LIKE TERMS:  $3x^3 + 9z + 2x^3 + 5z + 6x^2$

65). **CREATE A TABLE OF ORDERED PAIRS FOR THE FUNCTION  $y = 2x^2 - 2$  USING THE VALUES  $x = -2, -1, 0, 1,$  AND  $2$ . THEN GRAPH THE ORDERED PAIRS ON THE GRAPH THAT HAS BEEN PROVIDED.**

x	$y = 2x^2 - 2$	(x,y)
-2		
-1		
0		
1		
2		



**SOLVE EACH OF THE FOLLOWING BY USING A PROPORTION. SHOW ALL WORK:**

66). In two hours a student earns \$6.30. How much will be earned in 5 hours?

67). Two slices of mushroom pizza cost \$2.45, how much will 8 slices cost?

**SOLVE THE FOLLOWING PROPORTIONS. SHOW ALL WORK.**

68).  $\frac{40}{15X} = \frac{10}{12}$

69).  $\frac{a+2}{6} = \frac{a}{-3}$

70).  $\frac{4a+5}{6} = \frac{2a-3}{-7}$

**SOLVE THE FOLLOWING PERCENTAGE PROBLEMS**

71). What percent of 125 is 50?

72). What is 25% of 60?

73). Forty-five percent of what number is 50.

**SOLVE THE FOLLOWING FOR X. SHOW ALL WORK.**

74).  $x + 12 = 48$

75).  $9x = 90$

76).  $7x = 161$

77).  $2x + 12 = 48$

78).  $9x + 9 = 18$

79).  $7x - 10 = 32$