Welcome to Norwalk High School!

You are about to embark on the next journey in your educational career. We are looking forward to a year-long adventure with you in Algebra 1.

This summer packet contains topics that you are expected to know prior to entering Algebra 1. You have learned these skills over the past few years. These questions focus on both number fluency and problem solving. The packet should be completed independently.

Just like the redesigned SAT, some sections will require the use of a calculator, while other sections prohibit the use of a calculator. In the directions, it will say if you are not allowed to use a calculator. If you are having difficulty with a question, use Khan Academy, Purple Math, or Google to help.

The summer packet is due on the first day of class. You are to complete the packet in pencil and show all work. Your first test of the school year will be on the first day of class and will cover the topics from the summer packet.

For the 2018-2019 school year, you will be required to bring the following supplies to class every day starting on the first day:

1. TI-84 Plus or TI-84 CE graphing calculator
2. 1½ inch 3-ring binder with 8 dividers
3. Red, orange, or pink pen
4. Mechanical pencils
5. Loose leaf paper
6. Colored pencils

Enjoy your summer!
Pencil only

Due: First day of class

This packet is a review of the topics learned in previous mathematics classes. All problems are to be answered. **Number sense and fluency are an integral part of Algebra 1, so a calculator is not to be used unless so noted.**

Fill in the table **without using a calculator.**

### MULTIPLICATION TABLE

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Evaluate the following **without a calculator.**

1) $5 + 3 \cdot 7 + 8 \div 4 = ____$

2) $| -4 | = ____$

3) $2 - 9 = ____$

4) $-2 - 9 = ____$

5) $-2 + 9 = ____$

6) $2 - (-9) = ____$

7) $\frac{1}{3} (12) = ____$

8) $-4 \cdot 7 = ____$

9) $\frac{32}{4} = ____$

10) $3 \cdot 0 = ____$

11) $(-3)^2 = ____$

12) $-3^2 = ____$

13) $2^4 = ____$

14) $\sqrt{25} = ____$

15) $\sqrt{8} = ____$

16) Fill in the blank with a number that makes the sentence true.

- $\square + -6 = -5$
- $8 - \square = -1$
- $\square \times -7 = -56$
- $\square - -8 = 11$
- $\square \times -6 = 18$
- $-5 + \square = 0$
- $9 - \square = 16$
- $\square = 4$
Evaluate the following without a calculator.

17) \( \frac{2}{8} + \frac{5}{8} \)
   - A) \( \frac{7}{16} \)
   - B) \( \frac{7}{8} \)
   - C) \( \frac{10}{16} \)
   - D) \( \frac{7}{64} \)

18) \( -\frac{3}{4} \cdot \frac{2}{7} \)
   - A) \( \frac{3}{14} \)
   - B) \( -\frac{3}{14} \)
   - C) \( \frac{21}{8} \)
   - D) \( -\frac{21}{8} \)

19) \( -\frac{1}{3} \div \frac{3}{5} \)
   - A) \( -\frac{1}{5} \)
   - B) \( -\frac{5}{6} \)
   - C) \( -\frac{5}{9} \)
   - D) \( -5 \)

20) What is the least common denominator (LCD) of \( \frac{2}{3} \) and \( \frac{1}{2} \)?
   - A) 2
   - B) 3
   - C) 6
   - D) 8

21) \( \frac{3}{4} + \frac{4}{5} \)
   - A) \( \frac{7}{9} \)
   - B) \( \frac{2}{5} \)
   - C) \( \frac{31}{20} \)
   - D) \( \frac{4}{3} \)

22) What is the greatest common factor (GCF) of 18 and 12?
   - A) 2
   - B) 3
   - C) 6
   - D) 12

23) Write \( 9 \frac{1}{3} \) as an improper fraction.  
    23) \( \frac{28}{3} \)
24) Which number is **not** a perfect square?

A) 9  
B) 16  
C) 26  
D) 36

25) If the area of the square is 49 square inches, what is the length of side \( s \)?

\[ s = \sqrt{49} = 7 \]

26) If the volume of the cube is 27 cubic inches, what is the length of edge \( s \)?

\[ s = \sqrt[3]{27} = 3 \]

27) Which of the following describe 47? Select all that apply.

- natural number
- integer
- irrational number
- whole number
- rational number

28) Which one of the following numbers is irrational?

- \( \frac{66}{97} \)
- 93
- \( \sqrt{57} \)
- 80

29) Which of the following describe -5? Select all that apply.

- natural number
- integer
- irrational number
- whole number
- rational number

30) Which of the following describe \( \sqrt{100} \)? Select all that apply.

- natural number
- integer
- irrational number
- whole number
- rational number
31) Which two integers is $\sqrt{59}$ between?

- 10 and 11
- 9 and 10
- 7 and 8
- 6 and 7

32) Complete the following statement. Use the integers that are closest to the number in the middle.

- $\underline{5} < \sqrt{17} < \underline{6}$

33) Write the expression $5 \cdot x \cdot x \cdot y \cdot y$ using exponents.

34) Plot and label the ordered pairs with the letter.

$A(2,1)$  $B(-3,4)$  $C(0,-3)$

$D(-4,-1)$  $E(4,0)$  $F(1,-2)$

35) Which ordered pair below lies in Quadrant III?

36) Which fraction is equivalent to $\frac{2}{6}$?

- $\frac{1}{3}$
- $\frac{1}{2}$
- $\frac{2}{3}$
- $\frac{2}{5}$
37) Which fraction is equivalent to $\frac{6}{9}$?

\[ \frac{2}{3}, \frac{4}{5}, \frac{7}{8}, \frac{5}{6} \]

38) Which fraction is equivalent to $\frac{8}{18}$?

\[ \frac{13}{17}, \frac{3}{9}, \frac{9}{19}, \frac{4}{9} \]

39) Which fraction is equivalent to $\frac{4}{5}$?

\[ \frac{8}{10}, \frac{6}{7}, \frac{2}{3}, \frac{3}{5} \]

40) Write the fraction in lowest terms.

\[ \frac{2}{6}, \frac{3}{12}, \frac{10}{16}, \frac{35}{49} \]

\[ \square, \square, \square, \square \]

41) Fill in the missing number that makes the fractions equal.

\[ \frac{3}{4} = \frac{\square}{8}, \quad \frac{16}{\square} = \frac{8}{10} \]

42) Select all ratios equivalent to 3:2.

\[ \checkmark 27:18, \checkmark 6:4, \checkmark 15:1 \]

43) Find the number that makes the ratio equivalent to 1:6.

\[ 5:\square \]

44) Find the number that makes the ratio equivalent to 3:2.

\[ 9:\square \]
45) Find the unit rate.

20 minutes for 5 songs = ______ minutes per song

48 passengers on 4 buses = ______ passengers per bus

46) Solve: \( \frac{x}{4} = \frac{5}{2} \)

46) \( x = \) ___________

For question 47 – 49, set up a proportion and solve.

47) Gabriel measured a campground and made a scale drawing. He used the scale 1 inch : 2 yards. The picnic area is 45 inches in the drawing. How wide is the actual picnic area?

______ yards

48) Leo made a scale drawing of a city. A park is 28 inches wide in the drawing. The actual park is 84 yards wide. What scale did Leo use?

1 inch : ______ yards

49) Sebastian grew 6 plants with 2 seed packets. With 6 seed packets, how many total plants can Sebastian have in his backyard?

______ plants

50) Write 0.17 as a fraction.

50) ______

51) Write \( \frac{1}{4} \) as a decimal number.

51) ______

52) Write \( \frac{9}{10} \) as a decimal number.

52) ______

53) Write 7.3% as a decimal.

53) ______

54) Write 0.235 as a percent.

54) ______

55) Express \( \frac{5}{8} \) as a decimal, and as a percent.

Decimal: ___________  Percent: ___________
56) What is 50% of 80?  
57) What is 75% of 36?  
58) 22 is what percent of 40?  
59) 12 is 30% of what number?  
60) A school club had an election to select a president. 4 out of the 40 members voted in the election. What percentage of the members voted?  
61) A store pays $15 for a pair of shoes and marks the price up by 30%. What is the new price?  
62) An item costs $20. Sales tax is 6.35%. What will be the total cost?  
63) Which coupon will save more money on a radio originally priced at $30?  
64) The original price of an item is $50. What is the sale price?  
65) A pair of shoes was marked down from $68 to $51. What percentage is the discount?  
66) An item costs $500. The total cost of the item with sales tax is $530. What is the sales tax percentage?  
67) If the sale price of an item is $17, what was the original price?
68) Use the Pythagorean Theorem to find the missing length in each right triangle.

What is the length of the hypotenuse?
\[ c = \text{_____} \text{ miles} \]

What is the length of the missing leg?
\[ b = \text{_____} \text{ inches} \]

69) Approximate the length of the diagonal of the square to the nearest tenth.

69) \text{_____}