Name: _____ Period: _____

Summer Assignment
for Algebra 1

Directions:

1. This packet should be completed by the first day of school.
2. Complete the problem in the space provided.
3. SHOW ALL YOUR WORK!!!!
4. Make sure to bring the packet to class on the first day of school.
5. You will be tested on this packet the second week of school.
6. We will review this packet before the test.
7. All fractions should be reduced.
8. All expressions should be simplified.

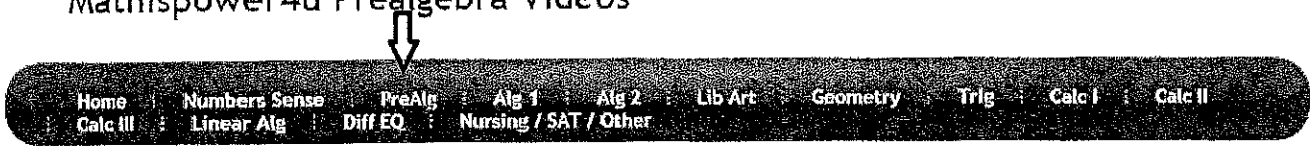
Allow yourself lots of time to complete this packet. Give it your best effort.

If you have questions over the summer, email me at: swhitt@lvhs.org
I check my Lenape Valley email over the summer and will answer your questions

If you need help,

1.) visit the website: http://mathispower4u.yolasite.com/algebra.php

You will see:



Click for the playlist: Arithmetic / Prealgebra Playlist

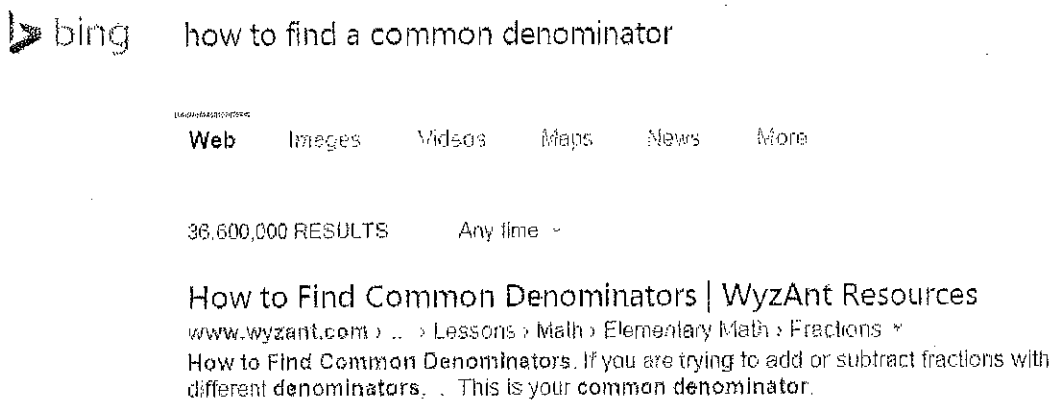
Click on PreAlg

Click on Arithmetic / Prealgebra Playlist

Select anyone of the many, many short videos.

2.) Log on to the internet. Type in the topic you want to see.

Example:



Chapter 1 – *Connections to Algebra*

1.1– Variables in Algebra: *Evaluate the expression for the given value of the variable.*

Need help? Go to: https://www.youtube.com/watch?v=rHcR3vUx8-o&feature=youtu.be

1. $a + 14$ when $a = 23$	2. $1.8x$ when $x = 10$	3. $\frac{m}{1.5}$ when $m = 15$
4. $\frac{15}{y}$ when $y = 7.5$	5. $p - 12$ when $p = 22$	6. $b(0.5)$ when $b = 9$
7. How long will it take to walk 6 miles if you walk at a rate of 3 miles per hour?		

1.2– Exponents and Powers: *Evaluate the expression.* ***No calculators allowed here.***

Need help? Go to: https://www.youtube.com/watch?v=ESll61x3CSE

8. Eight to the fourth power	9. $(2+3)^5$	10. s^2 when $s = 1.5$
11. $6 + (b^3)$ when b = 3	12. $2x^4$ when $x = 2$	13. $(5x)^3$ when $x = 5$

1.3– Orders or Operations: *Evaluate the expression.* ***No calculators allowed here.***

Need help? Go to: https://www.youtube.com/watch?v= tHQgBt1KQ4

14. $4 + 21 \div 3 - 3^2$	15. $(14 \div 7)^2 + 5$
16. $\frac{6+2^2}{17-6\cdot 2}$	17. $\frac{x-3y}{6}$ when x = 15 and y = 2

1.4– Equations and Inequalities: *Check whether the given number is a solution of the equation or inequality.*

Need help? Go to: https://www.youtube.com/watch?v=rHcR3vtJx8-o&feature=youtu.be

18. $2a - 3 = 2$; 4	19. $x^2 - x = 2$; 2
20. $9y - 3 > 24$; 3	21. $5x + 2 \leq 27$; 5

1.5– A Problem Solving Plan Using Model

22. You are given $75 to buy juice for the school dance. Each bottle of juice costs $.75. Write a verbal and algebraic model to find how many bottles of juice you can buy. Write an equation and use mental math to solve the equation.

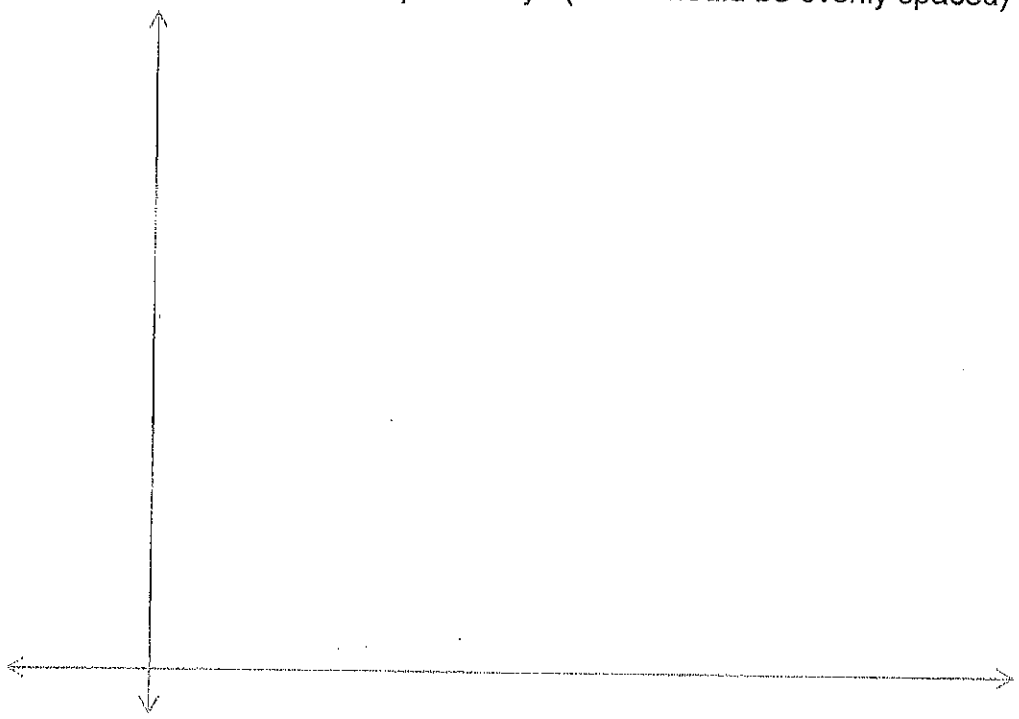
1.6– Tables and Graphs: ***Use the data in the table.***

Need help? Go to: https://www.youtube.com/watch?v=0NTvl5pn4lg&feature=youtu.be

Percent of Voting-Age Population that Voted in Yearly Municipal Referendum, 1976 - 1996

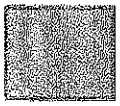
Year	1976	1980	1984	1988	1992	1996
Percent	53.5	52.8	53.3	50.3	55.1	48.9

23. Make a line graph of the data. Year=x and percent=y. (units should be evenly spaced)



24. What can you conclude from the line graph?

1.7 – An Introduction to Functions: *You are buying rectangular picture frames that have side lengths of 2w and 3w.*



Need help with domain and range? Go to:
https://www.youtube.com/watch?v=jGxW8qsR_u8&feature=youtu.be

25. Write an equation for the perimeter, starting with a verbal model.

Perimeter=_____

26. Make an input-output table that shows the perimeter of the frames when $w = 1, 2, 3, 4,$ and 5.

W	P
1	
2	
3	
4	
5	

27. Describe the domain and range of the function whose values are shown in the table.

Domain = _____

Range = _____

Chapter 2 – *Properties of Real Numbers*

2.1 – A Real Number Line: *Graph the numbers on a number line. Then write two inequalities that compare the two numbers.*

Need help? Go to: https://www.youtube.com/watch?v=tO3am8fjwD0

1. 7 and 6	2. -3.9 and -4.3	3. -9 and 8
4. -0.2 and -0.25	5. 13.9 and -14.9	6. $\left\|-\frac{4}{7}\right\|$ and $-\left\|\frac{5}{11}\right\|$

2.2 – Addition of Real Numbers: *Find the sum.* ***No calculators allowed here.***

Need help? Go to: https://www.youtube.com/watch?v=H_qqDsKpK9o

7. 12 + (-7)	8. -24 + (-16)	9. 2.4 + (-3.1)
10. 9+ (-10) + (-3)	11. -35 + 41 + (-81)	12. $-\frac{3}{8}+\frac{7}{8}+\left(-\frac{1}{8}\right)$

2.3 – Subtraction of Real Numbers ***No calculators allowed here.***

Need help? Go to: https://www.youtube.com/watch?v=H_qgDsKpK9o

13. $-2-7-(-8)$	14. $5-11-(-6)$	15. $-18-14-(-15)$
16. $-5.7+3.1-8.6$	17. $-\frac{7}{16}+\left(-\frac{3}{16}\right)-\frac{13}{16}$	18. $-\frac{23}{36}-\left\|-\frac{4}{36}\right\|+\left(-\frac{7}{36}\right)$

2.4 – Adding and Subtracting Matrices: *Find the sum and the difference of the matrices.*

Need help? Go to: *https://www.youtube.com/watch?v=RMoXwrGoZJg*

19Add. $\begin{bmatrix}-3 & -2\\ 8 & 4\end{bmatrix}+\begin{bmatrix}4 & -2\\ -7 & 5\end{bmatrix}$	20Add. $\begin{bmatrix}-2 & 5 & 9\\ -3 & 10 & 0\end{bmatrix}+\begin{bmatrix}-1 & -6 & 11\\ -2 & -7 & 1\end{bmatrix}$
19 Subtract. $\begin{bmatrix}-3 & -2\\ 8 & 4\end{bmatrix}-\begin{bmatrix}4 & -2\\ -7 & 5\end{bmatrix}$	19Subtract. $\begin{bmatrix}-2 & 5 & 9\\ -3 & 10 & 0\end{bmatrix}-\begin{bmatrix}-1 & -6 & 11\\ -2 & -7 & 1\end{bmatrix}$

2.5 – Multiplication of Real Numbers: *Find the product.* ***No calculators allowed here.***

Need help? Go to: *https://www.youtube.com/watch?v=QY-Za42DItw*

21. (-3)(12)	22. (5)(-8)	23. (-40)(-15)
24. (-1)(9)	25. $(-17)\left(\frac{2}{9}\right)$	26. (-14)(-0.3)
27. (9)(-5.5)	28. (-3.2)(-10)(2)	29. (-7)(-6)(-2)
30. (-12)(2)(-0.5)	31. $(-24)\left(-\frac{7}{12}\right)$	32. (11)(-1)(-7)(-3)

2.6 – The Distributive Property: *Use the distributive property to rewrite the expression without parenthesis.*

Need help? Go to: *https:// www.youtube.com/watch?v=RCvPG9D2gVM&feature=youtu.be*

33. 5 (x + 12)	34. (y + 6) 9	35. 5.5 (b – 10)	36. (3.2 – w) 2
37. (t + 11) (-3)	38. -2 (s + 13)	39. -2.5 (z – 5)	40. $-x\left(\frac{3}{7} + y\right)$

2.7 – Division of Real Numbers: *Find the quotient.*

Need help? Go to: *https://www.youtube.com/watch?v=o6zh558w8R4*

41. $48 \div (-12)$	42. $-34 \div 2$	43. $39 \div (-13)$	44. $-57 \div (-19)$
45. $55 \div (-1.1)$	46. $-63 \div 4\frac{1}{5}$	47. $\frac{48}{-\frac{3}{4}}$	48. $-\frac{-84}{\frac{7}{8}}$

2.8 – Probability and Odds: *Find the probability and the odds of randomly choosing a red marble from a bag of red and white marbles.*

Need help? Go to: https://www.youtube.com/watch?v=5VM1LZx_fpE

49. Number of red marbles: 12 Total number of marbles: 48 Probability = Odds=	50. Number of red marbles: 9 Total number of marbles: 81 Probability = Odds=
51. Number of white marbles: 36 Total number of marbles: 40 Probability = Odds=	52. Number of white marbles: 17 Total number of marbles: 68 Probability = Odds=

General Review:

1. Addition of Fractions:

$\frac{4}{10}+\frac{5}{10}=$	$\frac{4}{18}+\frac{5}{18}=$
$\frac{4}{20}+\frac{3}{10}=$	$\frac{4}{10}+\frac{5}{15}=\frac{\quad}{30}+\frac{\quad}{30}=$

2. Subtraction of Fractions:

$\frac{4}{12}-\frac{5}{12}=$	$\frac{14}{18}-\frac{10}{18}=$
$\frac{4}{20}-\frac{3}{10}=$	$\frac{4}{10}-\frac{5}{15}=\frac{\quad}{30}-\frac{\quad}{30}=$

3. Multiplication of Fractions

$\frac{4}{5}\bullet\frac{10}{11}=$	$\frac{1}{18}\bullet\frac{18}{20}=$
$\frac{-4}{12}\bullet\frac{20}{16}=$	$\frac{7}{9}\bullet\frac{6}{14}=$

4. Multiplication of Integers and Fractions:

$8 \bullet \frac{10}{12} =$	$12 \bullet \frac{18}{20} =$
$16 \bullet \frac{20}{16} =$	$28 \bullet \frac{6}{14} =$

5. Division of fractions

$\frac{4}{18} \div \frac{10}{12} = \frac{\quad}{\quad} \bullet \frac{\quad}{\quad} =$	$\frac{3}{15} \div \frac{12}{20} = \frac{\quad}{\quad} \bullet \frac{\quad}{\quad} =$
$\frac{2}{7} \div \frac{10}{14} = \frac{\quad}{\quad} \bullet \frac{\quad}{\quad} =$	$\frac{20}{14} \div \frac{45}{21} = \frac{\quad}{\quad} \bullet \frac{\quad}{\quad} =$

6. Reducing Fractions:

$\frac{10}{12} = \frac{5 \bullet 2}{6 \bullet 2} = \frac{5}{6}$	$\frac{25}{15} =$
$\frac{12}{36} =$	$\frac{20}{14} =$

7. Distributive Property and collect like terms:

$-2(x + 5) + 12(3 - x)=$	$15(x + 2) - 12(x - 1)=$
$100(x - 4) - 25x - 5x=$	$-25(x + 1) + 25(x + 1)=$

8. Plotting points on the coordinate plane: draw tick marks from -6 to +6 on both x-axis and y-axis

Plot these points: A= (0,0) B= (-2,3) C= (-4,-5) D= (6,-2) E= (2,6)	Plot these points: A= (0,2) B= (3,0) C= (0,-5) D= (-5,0) E= (0,-6)

9. Absolute value

$\lvert -5\rvert + \lvert -4\rvert + \lvert -3\rvert =$	$\lvert -5\rvert - \lvert -4\rvert - \lvert -3\rvert =$
$\frac{\lvert -5\rvert}{\lvert -3\rvert} + \frac{\lvert 11\rvert}{\lvert -3\rvert} =$	$\lvert -5 + 3\rvert + \lvert -4\rvert - 1 + \lvert -3 - 1\rvert =$

10. Exponents

$x^3 \bullet x^{10} =$	$2x^3 \bullet -6x^{10} =$
$\frac{30x^{10}}{5x^4} =$	$\frac{x^8}{x^{20}} =$

11.Percents

Write this number as a percent and as a decimal: $\frac{3}{4} =$	What is 25% of 600?
What percent is: $\frac{20}{25} =$	50 is 20% of what number?

12. Addition and Subtraction of Integers Timed Test – No calculators allowed here.

Goal: Complete in under 4 minutes with 100% accuracy.

5 + 3 =	-12 - 3 =	10 + 1 =	4 + 6 =	12 + 3 =
-12 + 3 =	5 - 3 =	12 - 3 =	-4 –(- 6) =	-10 + 1 =
-12 –(- 3) =	-4 - 6 =	4 - 6 =	10 - 1 =	-5 - 3 =
-10 – (-1) =	20 + 5 =	-5 – (-3) =	20 - 5 =	-4 + 6 =
-20 - 5 =	4 + 6 =	-20 –(- 5) =	-10 - 1 =	-20 + 5 =
-8 + 5 =	-12 + 5 =	1 + 5 =	8 + 5 =	12 - 5 =
-12 - 5 =	-1 + 5 =	-8 –(- 5) =	1 - 5 =	-1 –(- 5) =
-12 –(- 5) =	8 - 5 =	-1 - 5 =	12 + 5 =	-8 - 5 =