8th Grade Math Summer Homework

Name _____

Dear Future 8th Grade Math Student,

I hope you are excited for your upcoming year in 8th Grade Math! Algebra allows us to describe the world around us in a very precise and accurate manner. It allows us to make predictions, and model situations that vary over time. This branch of mathematics is foundational for all other areas of math. Your level of success in 8th grade math will directly correlate to how successful you will be in your future math experiences.

As you probably know, your mathematics classes are cumulative. This means that you will need to utilize concepts previously learned to be successful. The purpose behind this summer homework packet is to reacquaint you with the necessary skills to be successful in this year's math course.

At first glance this packet may seem overwhelming. However, there are approximately 9 weeks of summer. Pace yourself. There are 6 parts. Complete 1 part of this packet per week and you will easily be able to complete the assignment before your return to school in the fall. Please be prepared to submit this assignment during your second 8th grade math class. **It will be graded for accuracy as well as completion.** Work needs to be shown in a neat and organized manner, and it is perfectly acceptable to complete the packet on separate sheets of paper. Just be sure to staple any extra papers to the packet. Also, **do not** rely on a calculator. Please use paper and pencil techniques ONLY.

Show ALL work for each problem and take your time. Remember, this will be your first impression to your new math teacher, and you want to make sure that it is a positive one! See below for directions and helpful websites. We hope you have a wonderful summer!

Best,

Wareham High School Math Department

Need help with your Summer math packet???

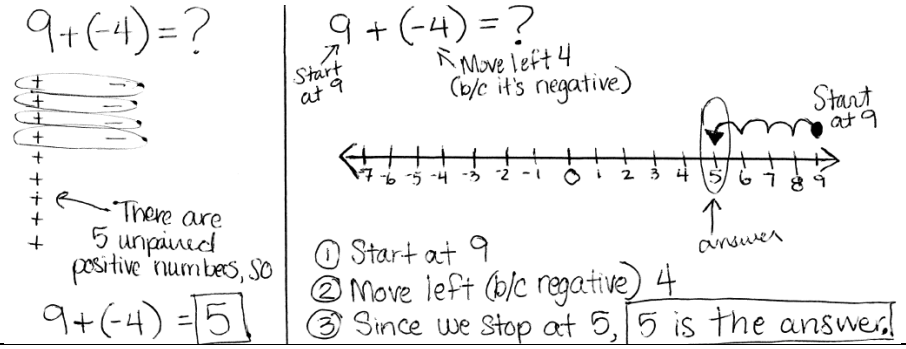
Feel free to email Mrs. Medina at mmedina@wareham.k12.ma.us with any questions you might have. To ensure the fastest response, please include your name, summer assignment name, and (if possible) a picture of the problem and your accompanying work.

Directions:

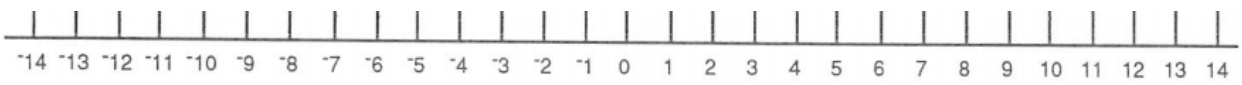
- Before answering any questions, read through the given notes and examples for each topic.
- This packet is to be submitted during your **second grade 8 class period**.
- All work must be shown in the packet or on a separate sheet of paper stapled to the packet.
- **To avoid a penalty on your grade, final answers MUST BE BOXED or CIRCLED.**

Part 1 – Integers

Example: Adding Integers

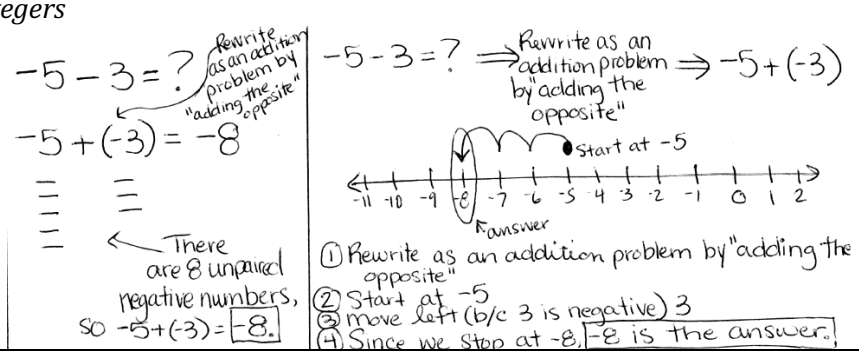


Use the number line below to help you with the problems that follow for addition and subtraction.



-3 + -5 = _____	8 + -2 = _____	7 + -7 = _____	-3 + 5 = _____	-4 + 9 = _____
6 + -13 = _____	-5 + 5 = _____	-6 + 6 = _____	5 + -3 = _____	13 + -4 = _____
8 + -9 = _____	-5 + -6 = _____	-14 + 6 = _____	-1 + 10 = _____	1 + -10 = _____
-12 + 0 = _____	13 + -13 = _____	10 + -20 = _____	8 + -16 = _____	-12 + 25 = _____
-3 + 7 = _____	-6 + -2 = _____	-47 + 47 = _____	100 + -25 = _____	-77 + 78 = _____

Example: Subtracting Integers



Rewrite each as an addition problem and evaluate. The first two have been done for you.

6 – 8 = 6 + (-8) = **-2**	-4 – (-8) = -4 + (+8) = **4**	5 – 9 =	8 – 5 =	-3 – 6 =
-8 – 8 =	4 – 9 =	-5 – 3 =	-9 – 4 =	4 – 7 =
7 – 2 =	-1 – 6 =	-5 – 4 =	6 – (-8) =	-6 – (-8) =
-3 – (-7) =	-1 – (-8) =	-14 – (-4) =	17 – (-8) =	14 – (-5) =

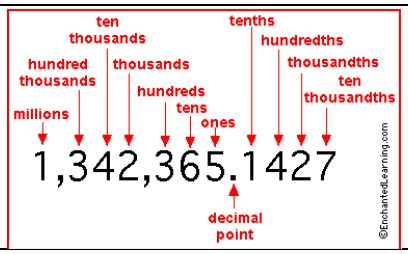
Part 2 – Order of Operations

P Grouping Symbols **E** Exponents **MD** → Multiply & Divide (left to right) **AS** → Add & Subtract (left to right)	*Example 1:* $8 - 3 \cdot 2 - 33 \div 11 =$ $8 - 6 - 3 =$ $2 - 3 =$ $\mathbf{-1}$	*Example 2:* $5 \cdot 2^2 - 2^3(-6 + 3) =$ $5 \cdot 2^2 - 2^3(-3) =$ $5 \cdot 4 - 8(-3) =$ $20 - (-24) =$ $20 + (+24) =$ $\mathbf{44}$

Evaluate the problems below. Be sure to use order of operations and circle your final answer

1. $8(-2) - (-4)^2 =$	2. $-4(1 + 5)^2 \div 6 - (42 + 5) =$
3. $-12^2 \div 4 - 3 \cdot 2^4 =$	4. $8 - 4(2 + 5^2) \div 12 =$
5. $(-3)^2 \cdot (5 - 7)^2 - (-9) \div 3 =$	6. $(-1) \cdot (2 - 6)^2 \div 8 + 8 - 3 \cdot 4 =$

Part 3 – Rounding



Round each number to the nearest tenth

Example 1:	*Example 2:*	*Example 3:*	*Example 4:*
2.19 The 9 in 2.19 is in the hundredths place. Since 9 is greater than or equal to 5, the 1 in the tenths place rounds up to 2. So, *2.19 rounded to the nearest tenth is* ***2.2***	4.37 The 7 in 4.37 is in the hundredths place. Since 7 is greater than or equal to 5, the 3 in the tenths place rounds up to 4. So, *4.37 rounded to the nearest tenth is* ***4.4***	1.62 The 2 in 1.62 is in the hundredths place. Since 2 is less than 5, the 6 in the tenths place remains the same. So, *1.62 rounded to the nearest tenth is* ***1.6***	1.75 The 5 in 1.75 is in the hundredths place. Since 5 is greater than or equal to 5, the 7 in the tenths place rounds up to 8. So, *1.75 rounded to the nearest tenth is* ***1.8***

Round each number to the nearest tenth.

7. 1.57	8. 1.62	9. 3.68
10. 8.45	11. 3.34	12. 2.92
13. 7.58	14. 2.26	15. 11.93

Part 4 – Simplifying Expressions

Example 1:

$n - 7n$
$= 1n - 7n$ *fill in a '1' in front of variables with no coefficient*
$= 1n + (-7n)$ *rewrite any subtraction by 'adding the opposite'*
$= \mathbf{-6n}$ *add like you would integers*

Example 2:

$x - 10 + 1 + 6x$
$= 1x - 10 + 1 + 6x$ *fill in a '1' in front of variables with no coefficient*
$= 1x + (-10) + 1 + 6x$ *rewrite any subtraction by 'adding the opposite'*
$= 1x + 6x + (-10) + 1$ *reorganize by placing variables and constants that are alike together*
$= 7x + (-9)$ *add like you would integers*
$= \mathbf{7x - 9}$ *change back to subtraction wherever necessary*

16. $10n + 9n =$	17. $13r + 5r =$	18. $v - 1 + 2 =$
19. $8b + b =$	20. $8k - 7k =$	21. $a + 12 + 8a - 9 =$
22. $7r + 3 + 7 + 12r =$	23. $-12m - 7m =$	24. $-x - 8 - 3x =$

Part 5 – Solving One-Step Equations

Example 1:	*Example 2:*	*Example 3:*	*Example 4:*
$p - 7 = 3$ $+7 \quad +7$ $p = 10$	$5 + x = 3$ $-5 \quad -5$ $x = -2$	$-7m = 56$ $\frac{-7m}{-7} = \frac{56}{-7}$ $m = -8$	$\frac{8}{1} \cdot \frac{3}{16} = \frac{1}{8}z \cdot \frac{8}{1}$ $\frac{24}{16} = z$ $\frac{3}{2} = z$

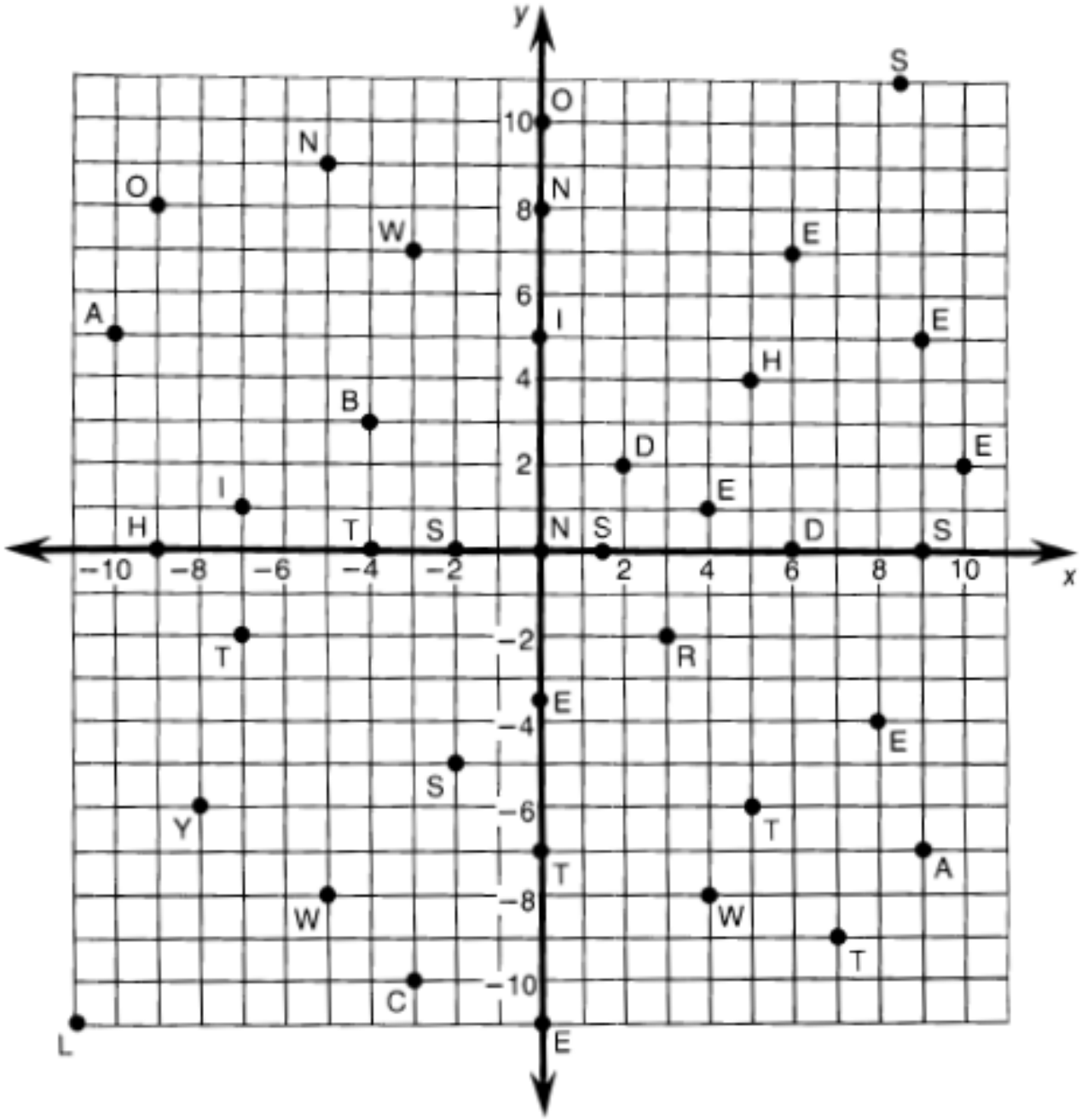
Solve the following one-step equations using the methods shown above.

25. $26 = 8 + v$	26. $3 + p = 8$	27. $15 + b = 23$
28. $-15 + n = -9$	29. $m + 4 = -12$	30. $x - 7 = 13$
31. $m - 9 = -13$	32. $-104 = 8x$	33. $14b = -56$

Part 6 – Coordinate Plane

What Happened After a Burglar Broke Into a Tuba Factory ?

Each ordered pair at the bottom of the page represents a point on the coordinates below. Above each ordered pair, write the letter that appears at that point.



(5, 4)	(10, 2)	(−3, 7)	(−10, 5)	(−2, −5)	(−3, −10)	(3, −2)	(8, −4)	(6, 0)	(0, 5)	(−4, 0)	(0, −11)	(2, 2)	
(−5, −8)	(−7, 1)	(7, −9)	(−9, 0)	(−7, −2)	(4, −8)	(6, 7)	(−5, 9)	(0, −7)	(−8, −6)	(0, 10)	(0, 0)	(9, 5)	
(9, 0)	(5, −6)	(−9, 8)	(−11, −11)	(4, 1)	(0, 8)	(−4, 3)	(9, −7)	(−2, 0)	(8.5, 11)	(0, −3.5)	(1.5, 0)		