Barnstable Intermediate School

## Summer Math Assignment

# Students Entering 7<sup>th</sup> Grade Pre-Algebra

Students who just completed 6<sup>th</sup> grade and are enrolling in 7<sup>th</sup> grade Pre-Algebra, are being asked to complete the accompanying math packet over the summer. Our 6<sup>th</sup> graders had a busy year learning new math skills. Mastery of all these skills is extremely important in order to develop a solid math foundation. Each year builds upon the previous year's skills in math. This packet contains problems that reinforce math skills learned this year and skills that will be needed for 7<sup>th</sup> grade Pre-Algebra.

Please complete all the pages from this packet. Completing the problems in the packet will help students be better prepared for math work in the fall. Students should <u>not</u> try to complete the packet in one day. Instead, students should work throughout the packet in small weekly sessions.

**This packet must be returned to your teacher on the first day of school.** During the first week of school, students will have the opportunity to clarify questions and practice prerequisite skills. Students will be assessed within the 4-6 days of the start of school.

#### Students must show all work!!!!!

Name:\_\_\_\_\_

Parent's Signature:\_\_\_\_\_

Parent's Email:\_\_\_\_\_

Recommended calculator needed for PreAlgebra: TI 30XIIS

### The following review topics have been identified by the 7<sup>th</sup> grade teachers:

#### Number System (Priority)

All operations with decimals and fractions Long division with whole numbers and rational numbers Identify common factors Equivalent fractions Interpreting integers in real-world scenarios Ordering and plotting integers on a number line Graphing on a coordinate plane

#### **Expressions & Equations**

Evaluating expressions Order of operations Writing an expression Properties of operations Solving one-step equations & inequalities

#### **Ratios & Proportional Relationships**

Find unit rate and apply to real world problems Find a percent of a number Converting measurement units

#### Geometry

Using a formula to find area of quadrilaterals, triangles and circles Solve real-world problems involving area, surface area, and volume Finding volume of prisms

#### **Statistics & Probability**

Find mean, median, mode & range

## Number System

## **Operations on Rational Numbers**

Evaluate each numerical expression. Simplify

1. $\frac{1}{7} \times 2\frac{2}{3}$	2. 8.2 – 1.26 + 2.3
3. 151.821 ÷ 2.7	4. $3\frac{1}{4} \div 4\frac{1}{2}$
5. 73.279 – 66.71	6. $\frac{11}{12} + \frac{7}{9} + 3\frac{1}{2}$

7. $1.7 + 2\frac{3}{4}$	8. $46 + 3\frac{3}{10}$
9. $12\frac{4}{5} - 4\frac{1}{3}$	10. 23.125(4.86)

11. $\frac{1}{7} \div 2\frac{2}{3}$	12. $8.2 \times 1.26 + 2.3$

13. 3.497 ÷ .26	$14 \ 3\frac{1}{4} \times 4\frac{1}{4}$
15. 75.279 - 00.71 + 2.1545	16. $\frac{1}{12} - \frac{1}{2} + \frac{3}{2}$
	12 9 2
$17 17 17^{3}$	$10 12^{1} 2^{7}$
$1/. 1.7 + 2\frac{1}{5}$	18. $12 - 2 - 8$
19. $12^{2} - 6^{5}$	20. 2(3.25) <sup>2</sup>
13. 12 <sub>3</sub> 9	

21. Arrange the numbers in order from least	22. Identify three equivalent fractions $\frac{2}{3}$
	$to \frac{1}{8}$
$1/4$ 3.25 0.7 $-3\frac{1}{3}$ -4.5	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	
23. List the common factors of	24. List the common factors of
12, 18 and 42	3x <sup>2</sup> and 9x
25. Plot the values -3, 5, -1,-1.2, 1.25 on a number line.	26. Give a real world example of the following expression:
	-13 + 6
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	



#### **Expressions and Equations**



30. Translate the statement into an algebraic expression.

The sum of a three and twice a number

31. Translate into words.

5x <u>></u> 14

## Solve and check each equation or inequality.

S	olve	Che	eck
32.			
X - $8\frac{1}{2}$ =	= 17		
2			
33.			
125 = 5>	(		

34.		
	X + 23 < 161	
35.		
	$\frac{x}{2}$	
	$\frac{1}{9} - \frac{1}{3}$	
36.		
	4x > 156	

#### **Ratios and Percents**

37. The ratio of the weight of Meg's cat to the weight of Anne's cat is 5:7. Meg's cat weighs 20 kg. How much more does Anne's cat weigh?

38. A recipe for fruit punch says to use 8 ounces of orange juice for every 3 ounces of grape juice. Nicky used 72 ounces of orange juice.

How many fewer ounces of grape juice were used?

39. Cameron bought ice skates that were on sale for 15% off the usual price. If the ice skates usually cost \$75, what is the sale price?

40. Scott bought lunch for his friends at the Happy Hamburger. The total bill was \$24. Scott decided to leave a 15% tip for the waiter. How much was the tip?

41. A car travel 456 miles in 8 hours. How many miles did it travel in 1 hour?

42. Convert each of the following:

a. 42 inches to feet

b. 126 inches to yards c. 7 yards to feet

#### Geometry



47. Draw a net to represent the triangular prism. Find the surface area.
48. The volume of a rectangular prism is 36.8 $\text{m}^3$ . If the length is 2.5 meters and the height is
4.6 meters, find the width.

#### Data & Statistics

49. Calculate the mean, median, mode and range: 18, 24, 17, 21, 24, 16, 29, 18
Mean
Median
Mode
Range
50.
Chad recently launched a new website. In the past six days, he has recorded the following number of daily hits: 37, 29, 37, 56, 45, 38. He is hoping at week's end to have an average number of 40 hits per day. To achieve this, how many hits must he have on the final day of the week?

