

Summer Assignment Coversheet

Course	Math 8 and Advanced Math 8
Teacher(s)	Monica Kelly, Cheryl Catts, Loretta Hayward, Karisa Wescott and Tara Gunning
Due Date	– Optional
Grade Category/Weight for Q1	Not applicable
Common Core and/or NJ Core Curriculum Content Standards covered	<p>MA.7.7.RP - Analyze proportional relationships and use them to solve real-world and mathematical problems.</p> <p>MA.7.7.NS - Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</p> <p>MA.7.7.EE - Use properties of operations to generate equivalent expressions. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.</p> <p>MA.7.7.SP - Use random sampling to draw inferences about a population. Draw informal comparative inferences about two populations. Investigate chance processes and develop, use, and evaluate probability models.</p>
Description of Assignment	This packet is a series of pre-algebraic problems covering skills taught in 7 th grade.
Purpose of Assignment	This packet is meant to prepare students for the course and give them practice on skills needed to be successful in 8 th grade Math.
Specific Expectations	Students are expected to attempt every problem without the use of a calculator unless otherwise stated.
Where to Locate Assignment	School District Website
Helpful Resource(s)	www.coolmath.com www.funbrain.com www.aplusmath.com www.mathmaster.org
Dept. Coordinator Signature	

Reminder: Math 8 are to complete 1 - 6 in each section and Advanced Math 8 are to complete 1 - 10 in each section.

Order of Operations

1. $6 + 4 - 2 \cdot 3$	<p>(P) <u>Parenthesis</u></p> <p>E^x <u>Exponents</u></p> <p>M/D <u>Multiply or Divide</u> *from left to right in the problem</p> <p>A/S <u>Add or Subtract</u> *from left to right</p>
2. $15 \div 5 \cdot 2 - 1$	
3. $9 - 4 + 7 \cdot 3$	4. $13 + (6 - 4) \cdot 7$
5. $5 + 9 \cdot 3^2 - 4$	6. $(2 + 3)^2 - 3(4)$
7. $\frac{3[10 - (27 \div 3)]}{4 - 7}$	8. $35 - 3(5 + 1) \cdot 2 - 1$
9. $5(14 - 39 \div 3) + 4 \cdot \frac{1}{4}$	10. $[6(7 - 4)^2] \div 3$

Operations with Integers

Integer Rules	
<p>Adding</p> <p>Same Signs Add and Keep the Sign</p> <p>$13 + 35 = 48$ $-5 + -23 = -28$</p>	<p>Subtract</p> <p>Copy, Change, Opposite Then add</p> <p>$-65 - 24 =$ $-65 + -24 = -79$</p>
<p>Adding</p> <p>Different Signs Subtract and Take Sign of Number with Larger Abs. Value</p> <p>$-13 + 35 = 22$</p>	<p>Multiply & Divide</p> <p>Same Signs Positive Answer</p> <p>Different Signs Negative Answer</p>

1. $9 + -4$

2. $7 - 10$

3. $\frac{-10}{2}$

4. $-3(-5)$

5. $-5 - 7$

6. $5 - (-2)$

7. $-26 - 10$

8. $\frac{-39}{-13}$

9. $7(-11)$

10. $-2 - (-5)$

Evaluating Expressions

Evaluate each expression below given that: $x = 3$, $y = 2$ and $z = \frac{1}{2}$

1. $3x$	<p style="text-align: center;"><u>Evaluating Expressions</u></p> <p>Evaluate means "to find the value of"</p> <p>Be sure to use parentheses when substituting values in place of variables</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;"><u>Good</u></td> <td style="text-align: center; width: 50%;"><u>Bad</u></td> </tr> <tr> <td style="text-align: center;">$2x+3$, where $x=3$</td> <td style="text-align: center;">$2x+3$, where $x=3$</td> </tr> <tr> <td style="text-align: center;">$2(3)+3$</td> <td style="text-align: center;">$23+3$</td> </tr> <tr> <td style="text-align: center;">$6+3=9$</td> <td style="text-align: center;">26</td> </tr> </table>		<u>Good</u>	<u>Bad</u>	$2x+3$, where $x=3$	$2x+3$, where $x=3$	$2(3)+3$	$23+3$	$6+3=9$	26
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$2(3)+3$	$23+3$									
$6+3=9$	26									
2. $5y^2$	3. $-2x + y$	4. $2(x + z)$								
5. xyz	7. $2x + 3y - 8z$	6. $yz - x$								
9. $\frac{yz}{2}$		8. $12z - (x + y)$								
		10. $2x(y + z)$								

Distributive Property and Combining Like Terms

$$a(b+c) = ab+ac$$
$$a(b-c) = ab-ac$$

where a, b, and c are Real Numbers

$$\underline{4a} + \underline{5} + \underline{2a} - \underline{3}$$
$$= 6a + 2$$

NOTE: When distribution and combining like terms is in one expression you do the distribution first. 😊

1. $5x + 2x + 9 + 1$	2. $4y + 7x + 2y + 8x$
3. $10n - 2n + 9 - 4$	4. $11m + 7n - 9m + 2n$
5. $4(2x + 1)$	6. $3(x + 2) + 5$
7. $-2(3x + 5)$	8. $4 - 7(3x + 1)$
9. $-4(2x - 3)$	10. $2(5x + 3) + 3(2x + 1)$

Solving Proportions

SOLVING THE PROPORTION:

When solving proportions, follow these rules:

1. Cross multiply.
2. Divide BOTH sides by the number connected to the variable.
3. Check the answer to see if it makes a true proportion.

Problem:

$$\frac{52}{4} = \frac{n}{7}$$

$$4 \times n = 52 \times 7$$

Which number is connected to the variable? $\rightarrow \frac{4n}{4} = \frac{364}{4} \quad n = 91 \text{ miles}$

Since the 4 is connected to the variable, DIVIDE both sides by the 4.

$$4 \div 4 = 1; \quad 364 \div 4 = 91$$

therefore you are left with "n" on one side.

$$1. \quad \frac{x}{7} = \frac{15}{21}$$

$$2. \quad \frac{x}{-3} = \frac{8}{12}$$

$$3. \quad \frac{6}{15} = \frac{14}{x}$$

$$4. \quad \frac{x}{2.5} = \frac{6}{7.5}$$

$$5. \quad \frac{0.6}{1.2} = \frac{15}{n}$$

$$6. \quad \frac{x+1}{4} = \frac{5}{2}$$

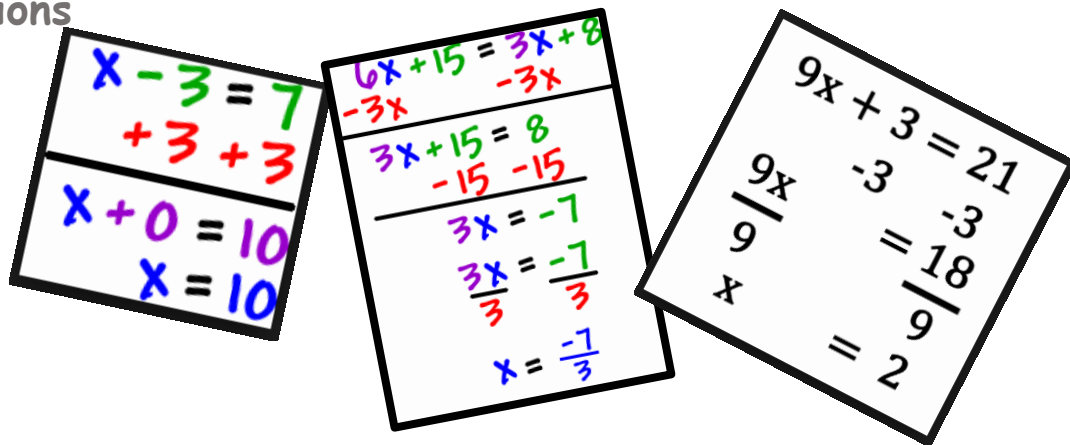
$$7. \quad \frac{2x+3}{18} = \frac{2}{4}$$

$$8. \quad \frac{2}{0.1} = \frac{x}{0.5}$$

$$9. \quad \frac{y-1}{4} = \frac{2y+6}{6}$$

$$10. \quad \frac{3+y}{-4} = \frac{y}{8}$$

Solving Equations



1. $x + 3 = 5$	2. $x - 7 = 13$
3. $2x = 14$	4. $\frac{x}{4} = 11$
5. $2x - 5 = 15$	6. $\frac{x}{5} - 3 = 9$
7. $2(x - 1) = 12$	8. $4x - 9 = 6x - 17$
9. $4(2x + 1) = 3(4x - 2)$	10. $2(3x - 1) + 4 = -4(2x - 3)$

