



## The Heights School - MATH PACKET SUMMER 2020

### Summer Math Packet for Students Entering ALGEBRA I

Over the summer to better prepare you for the challenges of **Algebra I** next year, I have put together some worksheets for you to complete over the summer. The packet will be due on the first day to school in the fall.

The worksheets will cover the following topics:

- Review Section 1: Adding and Subtracting Fractions**
- Review Section 2: Multiplying and Dividing Fractions**
- Review Section 3: Operations with Integers**
- Review Section 4: Order of Operations**
- Review Section 5: Evaluating Expressions**
- Review Section 6: Plotting Points**
- Review Section 7: Solving Equations**
- Review Section 8: Word Problems**

Completing this Packet:

- Assignments will be passed in on the **FIRST** day of school and will count towards your homework grade for the first quarter.
- You will be **TESTED** on this information during the first week of school.
- All of this information will relate to Algebra I. It is imperative that you know each concept.
- For each problem, you should:
  1. Read directions
  2. Show all work
  3. Leave answers in **REDUCED FRACTIONS**, when possible. No decimal answers should be given!
  4. **NO WORK = NO CREDIT!**

Good luck! I hope you have a wonderful summer! See you in the fall.

Mr. Kilmer

**Review Section 1: Adding/Subtracting Fractions**  
**No Calculators Permitted. ALL work must be shown!!**



<b>1.</b> Convert to a mixed #  $\frac{11}{3}$  Answer: _____	<b>2.</b> Convert to a mixed #  $\frac{25}{13}$  Answer: _____	<b>3.</b> Convert to an improper fraction  $2\frac{3}{5}$  Answer: _____	<b>4.</b> Convert to an improper fraction  $4\frac{5}{11}$  Answer: _____	<b>5.</b> Convert to an improper fraction  $1\frac{1}{3}$  Answer: _____
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**Add the following fractions. Make sure you have a common denominator!**

<b>6.</b> $\frac{1}{15} + \frac{16}{15}$  Answer: _____	<b>7.</b> $5 + \frac{5}{3}$  Answer: _____	<b>8.</b> $\frac{2}{5} + \frac{1}{10}$  Answer: _____	<b>9.</b> $\frac{2}{5} + \frac{1}{7}$  Answer: _____	<b>10.</b> $\frac{2}{3} + \frac{1}{11}$  Answer: _____
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**Subtract the following fractions. Make sure you have a common denominator!**

<b>11.</b> $\frac{3}{7} + 2\frac{1}{7}$  Answer: _____	<b>12.</b> $5 - \frac{4}{9}$  Answer: _____	<b>13.</b> $\frac{3}{4} - \frac{1}{2}$  Answer: _____	<b>14.</b> $\frac{1}{7} - \frac{2}{3}$  Answer: _____	<b>15.</b> $\frac{3}{10} - \frac{1}{9}$  Answer: _____
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**Review Section 2: Multiplying/Dividing Fractions**  
**No Calculators Permitted. ALL work must be shown!!**



**Reduce the following fractions.**

<b>1.</b> $\frac{2}{6}$  Answer: _____	<b>2.</b> $\frac{5}{125}$  Answer: _____	<b>3.</b> $\frac{3}{81}$  Answer: _____	<b>4.</b> $\frac{2}{32}$  Answer: _____	<b>5.</b> $\frac{6}{34}$  Answer: _____
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**Multiply the following fractions. Make sure to reduce all answers.**

6. $\frac{1}{3} \cdot \frac{2}{5}$	7. $\frac{1}{11} \cdot \frac{2}{9}$	8. $1\frac{1}{2} \cdot 2\frac{2}{3}$	9. $\frac{5}{3} \cdot \frac{3}{16}$	10. $3\frac{1}{2} \cdot 2\frac{3}{7}$
Answer: _____	Answer: _____	Answer: _____	Answer: _____	Answer: _____

**Divide the following fractions. Make sure to reduce all answers.**

11. $\frac{1}{9} \div \frac{2}{5}$	12. $\frac{3}{7} \div \frac{1}{2}$	13. $-\frac{7}{9} \div -\frac{4}{5}$	14. $\frac{6}{7} \div -\frac{2}{3}$	15. $3 \div \frac{4}{5}$
Answer: _____	Answer: _____	Answer: _____	Answer: _____	Answer: _____

**Review Section 3: Operations with Integers**  
**No Calculators Permitted. ALL work must be shown!!**



**Use mental math to simplify the following.**

1. $9 - 22$	2. $(-23) + (-10)$	3. $5 + (-7)$	4. $(-2) + 17$	5. $(-5) - (-3)$
Answer: _____	Answer: _____	Answer: _____	Answer: _____	Answer: _____
6. $(3)(-12)$	7. $(2)(5)(-3)$	8. $0.5 \cdot -3$	9. $3 \div 6$	10. $\frac{144}{12}$
Answer: _____	Answer: _____	Answer: _____	Answer: _____	Answer: _____



**Review Section 4: Order of Operations****No Calculators Permitted. ALL work must be shown!!****\*\* For fraction answers, make sure they are reduced!****Use order of operations (PEMDAS) to simplify the following!**

<b>1.</b> $2+6 \times 8 \div 4$  Answer: _____	<b>2.</b> $(8-5)2 \times 2 + 5$  Answer: _____	<b>3.</b> $10-8+6(2+4)^2$  Answer: _____	<b>4.</b> $-2\left[5+\left(3\cdot\frac{1}{6}\right)\right]^2$  Answer: _____	<b>5.</b> $4^4(5)+3(11)$  Answer: _____
<b>6.</b> $2^5-4^2 \div 2^2$  Answer: _____	<b>7.</b> $\left(\frac{3(6)}{17-5}\right)^4$  Answer: _____	<b>8.</b> $4 \times 6^2 \div 3 + 7$  Answer: _____	<b>9.</b> $\left(\frac{27-12}{8-3}\right)^3$  Answer: _____	<b>10.</b> $(4(5))^3$  Answer: _____

**Review Section 5: Evaluating Expressions****No Calculators Permitted. ALL work must be shown!!****\*\*For fractions answers, make sure they are reduced!****Evaluate the following when  $x = 2, y = -1, z = 3$** 

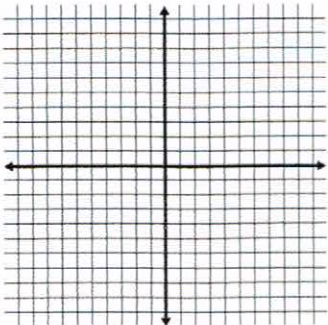
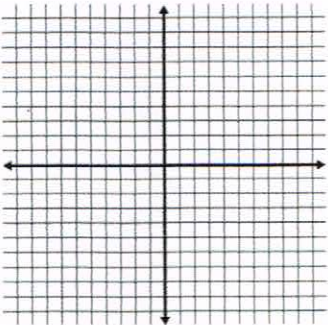
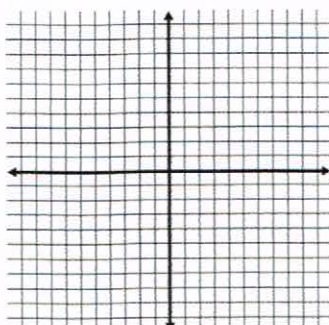
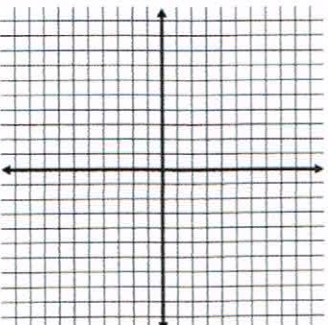
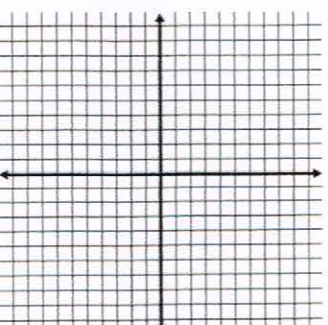
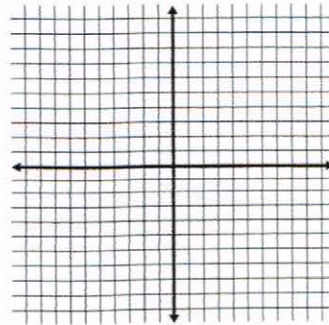
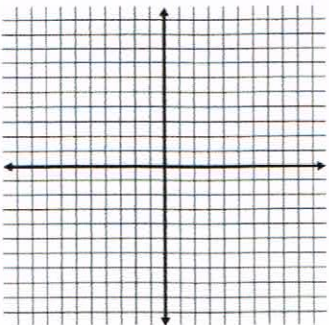
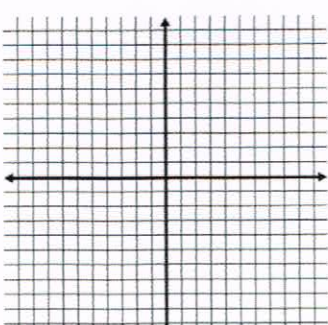
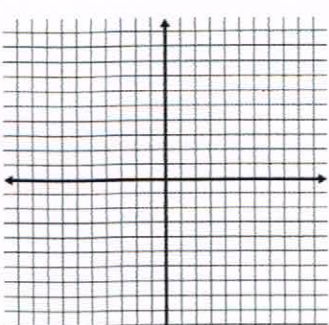
<b>1.</b> $12-(z-y)^2$  Answer: _____	<b>2.</b> $\frac{y}{z+3y}$  Answer: _____	<b>3.</b> $5x-2y$  Answer: _____	<b>4.</b> $\frac{xy}{z}$  Answer: _____	<b>5.</b> $(x-y^2)+3z$  Answer: _____
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Evaluate the following when  $a = \frac{1}{3}, b = \frac{2}{5}, c = -\frac{1}{2}$

<p>6. <math>a + b</math></p> <p>Answer: _____</p>	<p>7. <math>b - c</math></p> <p>Answer: _____</p>	<p>8. <math>\frac{c - b}{a}</math></p> <p>Answer: _____</p>	<p>9. <math>a + b + c</math></p> <p>Answer: _____</p>	<p>10. <math>a \div c</math></p> <p>Answer: _____</p>
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### Review Section 6: Plotting Points

Plot each ordered pair on the given graph.

<p>1. (1, 2)</p> 	<p>2. (3, -5)</p> 	<p>3. (5, 1)</p> 
<p>4. (-1, -1)</p> 	<p>5. (0, 6)</p> 	<p>6. (-1, 3)</p> 
<p>7. (7, 0)</p> 	<p>8. (2, -3)</p> 	<p>9. (-5, -7)</p> 

Review Section 7: Solve each equation for the unknown variable.



1) $t + 8 = 17$	2) $25 + x = 45$	3) $0.6 + a = 2.5$
4) $P - 6 = 69$	5) $6 - w = 69$	6) $Z - (2 * 8) = 25$
7) $4t = 32$	8) $2b = (4 * 5)$	9) $\frac{x}{3} = 7$
10) $\frac{w}{0.3} = 50$	11) $\frac{t}{6} = (5 + 9)$	12) $\frac{5}{6} = \frac{x}{8}$
13) $\frac{r+6}{3} = \frac{r+8}{6}$	14) $-6x + 9 = 3x - 27$	15) $-7 + 23 = 15x - 2 - 14x$



**Review Section 8: For the following word problems, please show your work and circle your answers.**



<p><b>1) Peter bought 8 pens for school in the fall. Each pen cost \$2.79. How much did he pay for the purchase?</b></p>	<p><b>2) Larry bought 4 books, 3 cups, and 7 binders. He paid \$4 per book, \$5 per cup and \$10 per notebook. Estimate his change from \$50 bill after buying the books and cups only.</b></p>
<p><b>3) Sears has sport coats on sale for \$23.95. The coats usually cost \$27.95. If Tom bought 3 coats on sale, how much did he save altogether?</b></p>	<p><b>4) Steve bought 14 gallons of gasoline at \$2.45 a gallon and 3 gallons of oil at \$3.75 per gallon. How much did he spend?</b></p>
<p><b>5) Matt and his two sisters ran on a relay that covered 127 miles. The three runners ran an equal amount of distance. How much did each athlete run?</b></p>	<p><b>6) How much will 30 pencils cost if 10 pencils cost \$0.59 and there is a \$0.10 discount if you purchase 3 dozen?</b></p>
<p><b>7) Usually, Joe works 8.5 hours a day and paid \$10.25 per hour. He gets \$1.50 bonus if her works over 40 hours per week. How much did he earn if he worked 10 hours a day for 3 weeks in a row? (note: Joe does not work on Saturdays and Sundays)</b></p>	<p><b>8) John Paul spent 15 minutes talking long distance to his friend. He paid \$3 for the first ten minutes and 35 cents for each minute thereafter. How much was his bill?</b></p>