

Name _____

Date _____

Summer Math
Completed Algebra I Honors

Instructions: Please complete the following problems showing all work. If you use scratch paper to work the problems out, please number the problems on the paper so that the work can be easily associated with a problem. This packet is due on the first day of school and will count as your first daily grade of the semester. This will be a completion grade. Full credit will not be given if work is not shown where applicable. Once your Summer Work is graded for completion, you will have the opportunity to review the packet with your teacher. Your first quiz of the semester will cover the topics in this packet.

If students are unclear as to solving a problem, they are welcome to check www.coolmath.com as a resource or www.Khanacademy.org for short videos which will explain the process. There are many other web resources, but those are two that have proven to be excellent. Your child should work through the problems until the correct solution is found, being sure to show all of the correct work along with this solution.

Section 1**Connections to Algebra**

Problems:

Answers:

1.	Evaluate the expression for the given value of the variable. $y - 14$ when $y = 32$	
2.	Evaluate the expression for the given value of the variable. $\frac{c}{23}$ when $c = 391$	
3.	Evaluate the expression for the given value(s) of the variable(s). $3y^2$ when $y = 5$	
4.	Evaluate the expression for the given value(s) of the variable(s). $(c - d)^2$ when $c = 10$ and $d = 3$	
5.	Evaluate the expression for the given value of the variable. $(d^4 - 6) \div 5$ when $d = 3$	

Section 2

Properties of Real Numbers

Problems:

Answers:

1.	Evaluate the expression. $ 8.5 $	
2.	Evaluate the expression. $ -3 $	
3.	Evaluate the expression. $ -4 + 3$	
4.	Find the sum. $-3 + 8$	
5.	Find the sum. $5 + (-7)$	
6.	Find the sum. $-4 + 13 + (-6)$	
7.	Find the sum. $\frac{9}{10} - \frac{1}{2} + (-\frac{1}{5})$	
8.	Evaluate the expression. $-8 - 5$	
9.	Evaluate the expression. $4.1 - 6.3$	
10.	Evaluate the expression. $3.6 - 2.4 - (-6.1)$	
11.	Find the sum or difference of the matrices. $\begin{bmatrix} 8 & -4 \\ 9 & 3 \end{bmatrix} + \begin{bmatrix} -2 & 6 \\ -1 & 5 \end{bmatrix}$	
12.	Simplify the expression. $(-6)(-7)$	
13.	Simplify the expression. $(3)(-8)(2)$	

14.	Simplify the expression. $(-c)^3(c)$	
15.	Use the distributive property to rewrite the expression without parentheses. $6(y + 5)$	
16.	Use the distributive property to rewrite the expression without parentheses. $(x + 3)(- 5)$	
17.	Simplify the expression. $3x + 7x$	
18.	Simplify the expression. $5.4m - 2.3m$	
19.	Simplify the expression. $82p - (-29p)$	
20.	Simplify the expression. $2x(7 - x) + 3x^2$	
21.	Simplify the expression. $18 \div (-2)$	
22.	Simplify the expression. $16 \div (-\frac{4}{5})$	
23.	Simplify the expression. $\frac{3x}{8} \div \frac{1}{2}$	
24.	Simplify the expression. $21x \div 7$	

Section 3**Solving Linear Equations**

Problems:

Answers:

1.	Solve the equation. $y - 6 = 8$	
2.	Solve the equation. $a - (-6) = 22$	
3.	Solve the equation. $ -7 + k = 4$	
4.	Solve the equation. $2x - 1 = 11$	
5.	Solve the equation. $-x - 5 + 3x = 1$	
6.	Solve the equation. $\frac{3}{5}x - 7 = 17$	
7.	Solve the equation if possible. $-3(-x - 4) = 2x + 1$	
8.	Solve the equation if possible. $4\left(\frac{1}{2}x + \frac{1}{2}\right) = 2x + 2$	
9.	Solve the equation. Round to the nearest hundredth. $-26x - 59 = 135$	
10.	Solve the equation. Round to the nearest hundredth. $3(3.1x - 4.2) = 6.2x + 3.1$	
11.	If you ride your bike for 2.5 hours and travel 37.5 miles, what is your average speed? (Hint: Solve $d = rt$.)	

12.	Rewrite the equation so that y is a function of x . Then use the result to find y when $x = -2, -1, 0,$ and 1 . $3 - y = x$	
13.	Find the unit rate. \$3 for 5 yogurt snacks.	
14.	Find the unit rate. Drive 122 miles in 2.5 hours.	
15.	Find the percent. Round to the nearest whole percent. Tax of \$1.00 on an item priced at \$19.99	
16.	Find the percent. Round to the nearest whole percent. 9 field goals made out of 14 attempted	

Section 4

Graphing Linear Equations and Functions

Problems:

Answers:

1.	Find the x -intercept and the y -intercept of the line. $2x - y = 6$	
2.	Find the slope of the line passing through the points. $(6, 1), (-4, 1)$	
3.	Find the slope of the line passing through the points. $(-4, 2), (-3, -5)$	
4.	Your earnings vary directly with the number of hours you work. If you earn \$60 for 4 hours of work, how much will you earn for working 35 hours?	

5.	Write the equation in slope-intercept form. $-3x + 2y = 6$	
6.	Write the equation in slope-intercept form. $x - 2y + 3 = 0$	

Section 5

Writing Linear Equations

Problems:

Answers:

1.	Write an equation of the line in slope-intercept form. The slope is -3; the y-intercept is -2	
2.	Write an equation of the line that passes through the point and has the given slope. Write the equation in slope-intercept form. $(5, 2), m = -2$	
3.	Write an equation of the line that passes through the point and has the given slope. Write the equation in slope-intercept form. $(3, 6), m = 0$	
4.	Write an equation in slope-intercept form of the line that passes through the points. $(3, -2), (5, 4)$	
5.	Write an equation in slope-intercept form of the line that passes through the points. $(0, 0), (2, 3)$	
6.	Write the point-slope form of the equation of the line that passes through the point and has the given slope. Then rewrite the equation in slope-intercept form. $(5, 3), m = -2$	
7.	Write an equation in standard form of the line that passes through the given point and has the given slope, or that passes through the two points. $(5, -2), m = 3$	
8.	Write an equation in standard form of the line that passes through the given point and has the given slope, or that passes through the two points. $(4, -2), (4, 5)$	

Section 6

Solving and Graphing Linear Inequalities

Problems:

Answers:

1.	Solve the inequality. $x + 5 > -4$	
2.	Solve the inequality. $3 \geq y - 4$	
3.	Solve the inequality. $\frac{3}{4}x + 5 \leq 8$	
4.	Solve the inequality. $2 \leq x + 4 < 8$	
5.	Solve the inequality. $-4x + 1 \geq 17$ or $5x - 4 > 6$	
6.	Solve the inequality. $2x + 1 > 9$ or $3x - 5 < 4$	
7.	Solve the equation or the inequality. $ 10 + x = 4$	
8.	Solve the equation or the inequality. $ 3x + 4 \leq 2$	

Section 7

Systems of Linear Equations and Inequalities

Problems:

Answers:

1.	Use the substitution method to solve the linear system. $x + y = 9$ $x - y = 3$	
2.	Use the linear combinations method to solve the system of linear equations. $2x + 3y = 15$ $3y + 5x = 12$	

3.	You pay \$105 for 8 tickets to attend a folk festival. Tickets for students cost \$10 each and tickets for adults cost \$15 each. How many of each type of ticket did you buy?	
4.	Use any method to solve the linear system and tell how many solutions the system has. $x + y = 4$ $2x + 3y = 9$	
5.	Use any method to solve the linear system and tell how many solutions the system has. $x + 2y = 5$ $3x - 15 = -6y$	

Section 8

Exponents and Exponential Functions

Problems:

Answers:

1.	Simplify, if possible. Write your answer as a power or as a product of powers. $(7^2)(7^3)$	
2.	Simplify, if possible. Write your answer as a power or as a product of powers. $(12x)^3$	
3.	Simplify, if possible. Write your answer as a power or as a product of powers. $(4r^4s)^2(-2s^2)^3$	
4.	Rewrite the expression with positive exponents. m^{-4}	
5.	Rewrite the expression with positive exponents. $\left(\frac{x}{2}\right)^{-2}$	

6.	Rewrite the expression with positive exponents. $\frac{3}{3x^{-4}y^3}$	
7.	Rewrite the expression with positive exponents. $(-3t)^0$	
8.	Simplify the expression. The simplified expression should have no negative exponents. $\left(\frac{3x^2z^4}{2xz}\right)^3$	
9.	Simplify the expression. The simplified expression should have no negative exponents. $\frac{(rst)^{-2} \cdot (t^2)^3}{rs (s^{-3})^4}$	
10.	Rewrite in decimal form. 4.813×10^{-6}	
11.	Rewrite in decimal form. 3.11×10^4	
12.	A principal of \$1100 is deposited in an account that pays 5% interest compounded yearly. Find the total balance after 1 year. (Hint: $I=Prt$ where P is the principal, r is the rate and t is the time.)	
13.	A piece of equipment originally costs \$120,000. The value decreases at a rate of 10% per year. Estimate its value after 6 years.(Hint: $y = C(1 - r)^t$ where C is the initial amount, r is the rate and t is the time.)	

Section 9

Problems:

Answers:

1.	Evaluate the expression.	$-\sqrt{169}$	
2.	Evaluate the expression.	$\pm\sqrt{6.25}$	
3.	Evaluate the expression.	$\sqrt{0.04}$	
4.	Solve the equation.	$x^2 = 36$	
5.	Solve the equation.	$5x^2 = 500$	
6.	Solve the equation.	$a^2 + 3 = 12$	
7.	Simplify the expression.	$\sqrt{44}$	
8.	Simplify the expression.	$\sqrt{2} \cdot \sqrt{8}$	
9.	Simplify the expression.	$\sqrt{\frac{27}{36}}$	
10.	Simplify the expression.	$\frac{\sqrt{32}}{\sqrt{25}}$	