

Geometry Honors Summer Assignment

Welcome to Geometry Honors at JDHS. This summer assignment will help us make sure you have the Algebra skills necessary to be successful in the course.

Instructions: Please print this summer packet and complete it neatly using a pencil. You may attach any scratch work to the back. Please bring your completed summer assignment the first day of school. This assignment will be collected on the very first day and serve as one of the first grades of the marking period.

All work can be and should be done WITHOUT a calculator. You are just cheating yourself if you use one. Write all solutions in the appropriate space.

Questions?

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Each solution is worth one point. This will be graded and put towards the first marking period. Also, be prepared for an assessment on this material within the first week of school.

Please solve the following linear equations.

Problem	Solution
$-20x = -4x - 6x$	
$8x - 2 = -9 + 7x$	
$4m - 4 = 4m$	
$5p - 14 = 8p + 4$	
$-8 = -(x + 4)$	
$14 = -2(n - 6)$	
$-18 - 6m = 6(1 + 3m)$	
$2(4x - 3) - 8 = 4 + 2x$	
$-(1 + 7x) - 6(-7 - x) = 36$	

$$24m - 22 = -4(1 - 6m)$$

Please factor the following completely. You are NOT solving for a value here.

Example: $2x^2 + 6x$

Solution: $2x(x + 3)$

Example: $x^2 + 4x + 3$

Solution: $(x + 3)(x + 1)$

Problem	Solution
$3x^2y + 15xy$	
$x^2 + 4x - 12$	
$100ab^2 - 200a^2b$	
$m^2 + m - 90$	
$n^2 - 10n + 21$	
$y^2 + 2y - 24$	
$x^2 - 13x + 40$	

$3x^2 - 2x - 5$	
$n^2 - n - 56$	

Factor the numerator and denominator, then simplify.

$\frac{x^2 + 2x - 24}{x^2 - 11x + 28}$	Solution:
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Please factor then solve the following quadratic equations. Please leave answers as whole numbers OR fractions.

Example: $x^2 - x + 90 = 0$

Solution: $(x - 10)(x + 9) = 0$

$x - 10 = 0$ OR $x + 9 = 0$

$x = 10$ OR $x = -9$

Problem	Solution(s)
$x^2 + 4x - 12 = 0$	
$x^2 + 16x + 64 = 0$	

$y^2 + 11y + 18 = 0$	
$x^2 - 5x = -6$	
$2x^2 + 6x + 8 = x^2$	
$2x^2 + 3x - 9 = 0$	
$5y^2 + 19y + 12 = 0$	
$2v^2 + 11v = -5$	
$x^3 + 2x^2 + x = 0$	

Please solve the following.

$\frac{x^2}{x+6} = \frac{36}{x+6}$	
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Please expand the following using the distributive property. A common error is illustrated below. Do not make this error.

Example: $(x + 5)^2$

Incorrect: $x^2 + 25$

Correct: $(x + 5)^2 = (x + 5)(x + 5) = x^2 + 5x + 5x + 25 = x^2 + 10x + 25$

Problem	Solution
$4x(x + 3)$	
$x^2y(5x - y)$	
$(x + 5)(x - 9)$	
$(x - 3)^2$	

$x(x + 1)(x - 6)$	
$(x + 2)(x + 3)(x + 4)$	

Please solve the following proportions.

Problem	Solution
$\frac{x}{3} = \frac{2}{6}$	
$\frac{2x+6}{4} = \frac{x}{-10}$	

$$\frac{10}{4x} = \frac{5}{20}$$

Challenge $\frac{2}{3x+6} = \frac{x+2}{x^2-10}$

Please write a system of equations to model each problem, and then solve. 2 points each
(Reminder: a system of equations involves more than one equation.)

a. Find the value of two numbers x and y if their sum is 12 and their difference is 4.

Equations:

Solution:

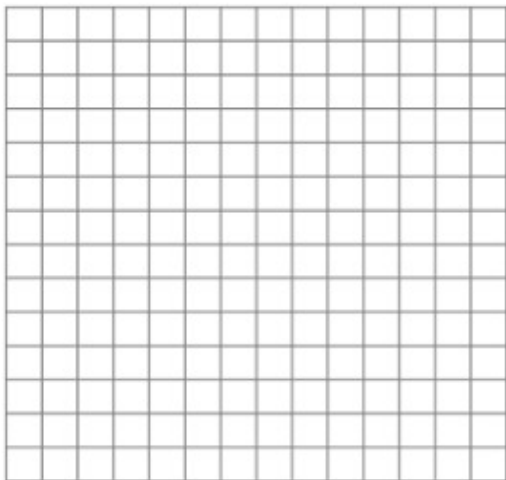
b. The difference of two numbers x and y is 3. Their sum is 13.

Equations:

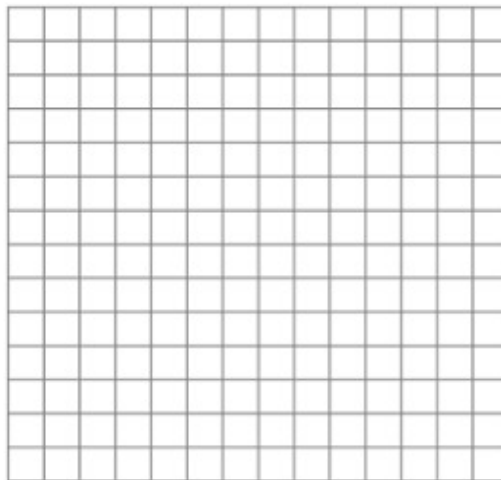
Solution:

Please graph the following linear equations. (Please draw in the axes.)

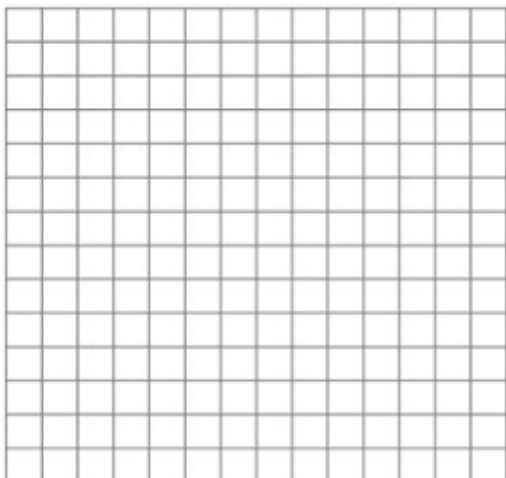
$$y = 2x + 1$$



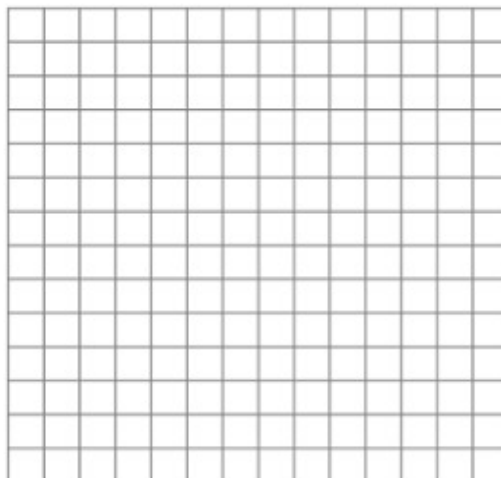
$$y = -x + 5$$



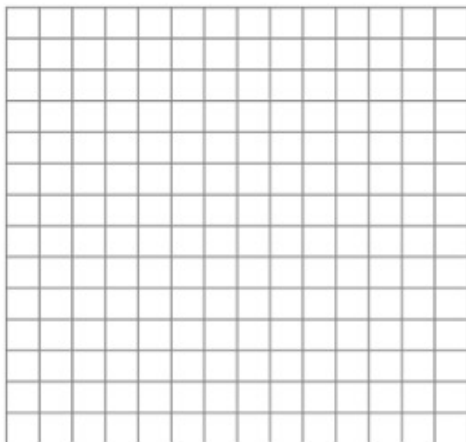
$$y = \frac{1}{3}x - 7$$



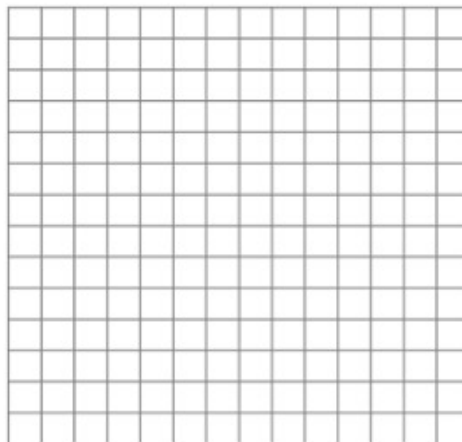
$$y = 9 - x$$



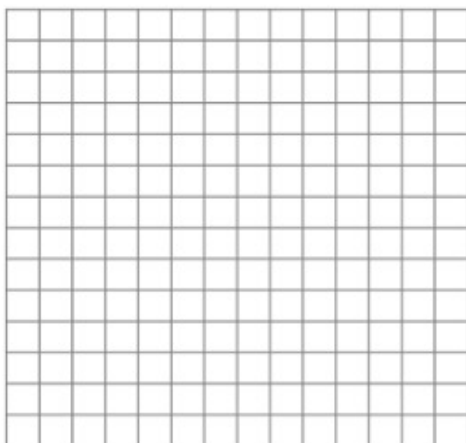
$$x + y = 3$$



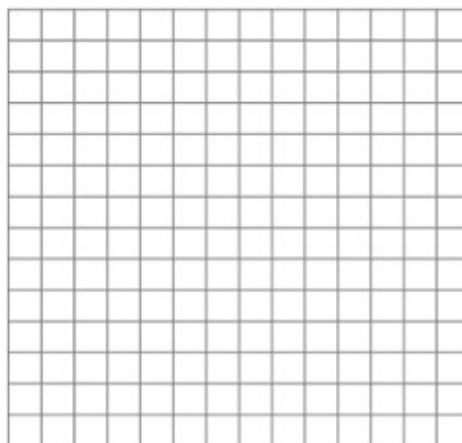
$$x = -y + 2$$



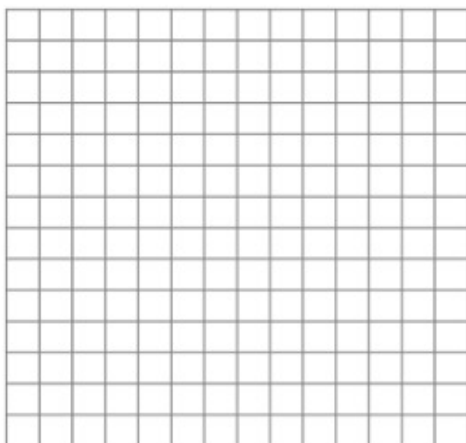
$$2x + 3y = 6$$



$$y = 3$$



$$x = 5$$



$$y - 3 = \frac{1}{5}(x + 10)$$

