

Geometry Assignment

Instructions: Please print this summer packet and complete it neatly using a pencil. You must show ALL WORK, either on the packet, or on separate paper attached to the packet. Please bring your completed summer assignment the first day of school. This assignment will be collected on the very first day, and will serve as one of the first grades of the marking period. Points will be taken off for lateness, or for students who do not show their work!

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:

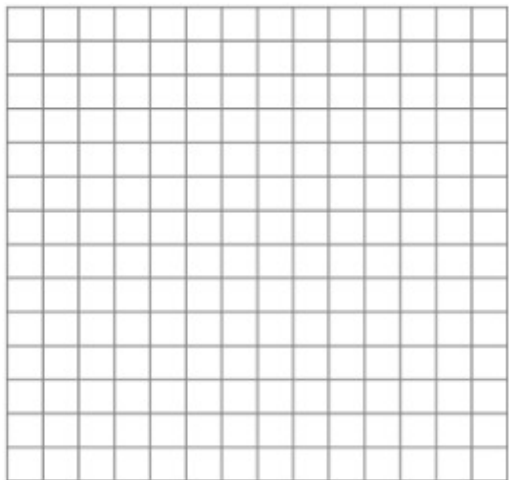
b. The difference of two numbers x and y is 3. Their sum is 13.

Equations:

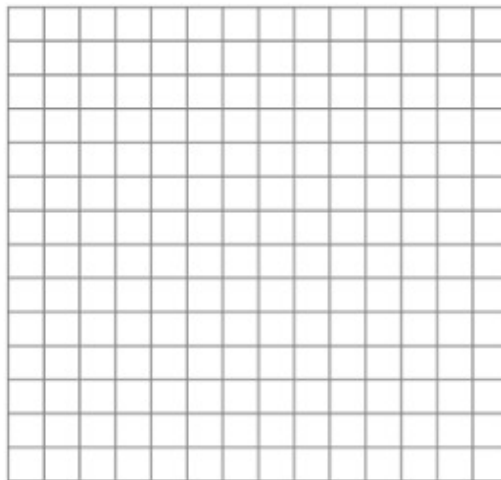
Solution:

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

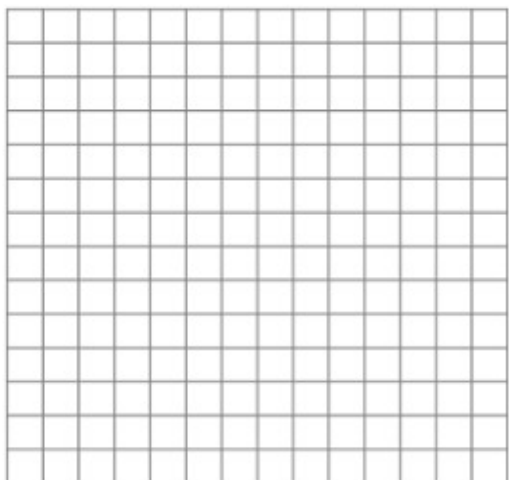
$$y = 2x + 1$$



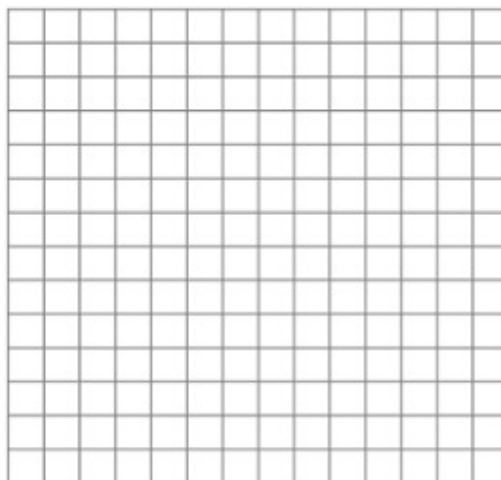
$$y = -x + 5$$



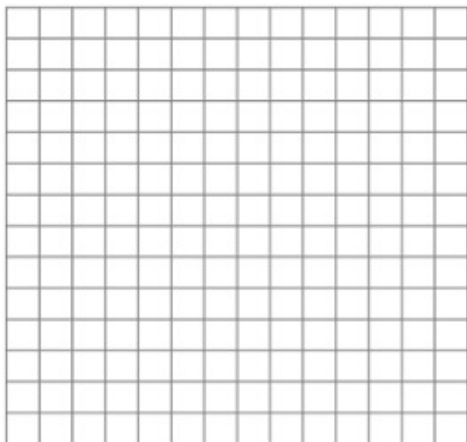
$$y = \frac{1}{3}x - 7$$



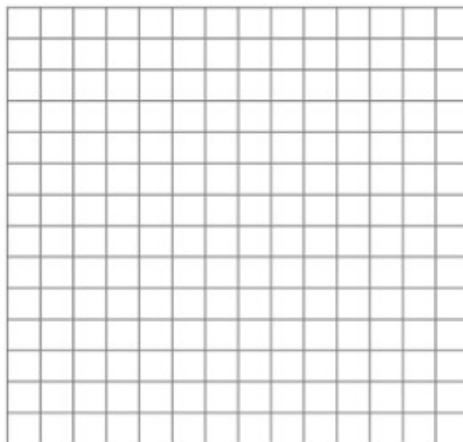
$$y = 9 - x$$



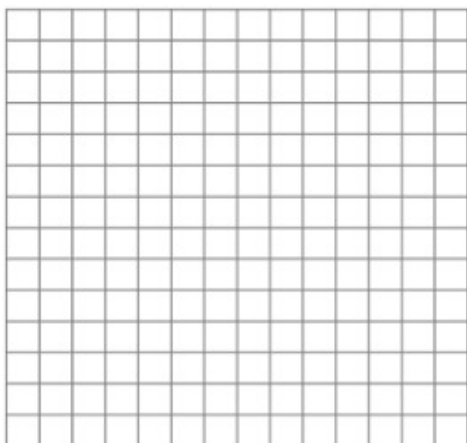
$$x + y = 3$$



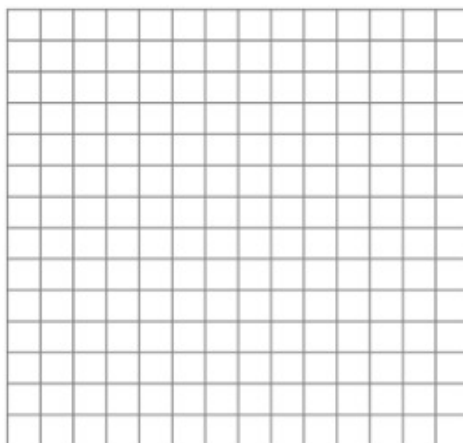
$$x = -y + 2$$



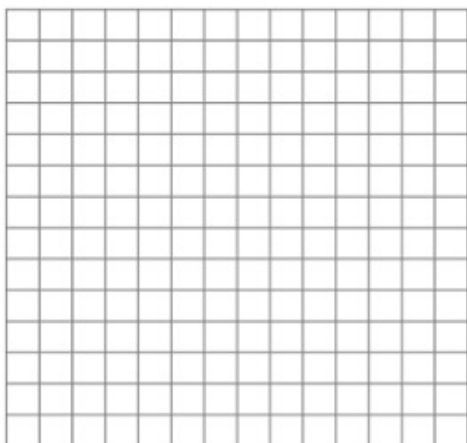
$$2x + 3y = 6$$



$$y = 3$$



$$x = 5$$



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

