BECA / Dr. Huson / 10.3 Geometry Name: .
14 March 2019

You only have to solve some of the problems, as shown. For those, show your work, and check your answer.

Classwork: π Day problems!

1. At college, the phone company charges \$35 for installation plus \$20 per month. The total you spent for service was \$235. How many months can you pay for?

   (a) Mark the text of the problem and then complete the values:

   Starting point = _____

   Rate of change = _____

   Total = _____

   (b) Write an equation for the problem of the form $y = mx + b$

2. A voice teacher charges \$45 for an initial meeting plus \$15 per hour for lessons. Your uncle gave you \$300 for singing lessons. How many hours work can you afford?

   (a) Initial amount = _____

   Rate of change = _____

   Total = _____

   (b) Write an equation for the problem of the form $y = mx + b$

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3. A cleaner charges \$75 per day plus \$25 per hour. If you allow \$250 for cleaning expenses, how many hours work can you tell the cleaner to expect?

   (a) Initial point = _____

   Rate of change = _____

   Total = _____

   (b) Write an equation for the problem of the form $y = mx + b$

4. A 12-piece jazz band charges \$350 to play for a party plus \$150 per hour. The total for the BECA graduation party was \$1100. How many hours did the band play?

   (a) Mark the text of the problem and then complete the values:

   Starting point = _____

   Rate of change = _____

   Total = _____

   (b) Write an equation for the problem of the form $y = mx + b$

   (c) Solve the equation for x

   (d) Check the answer

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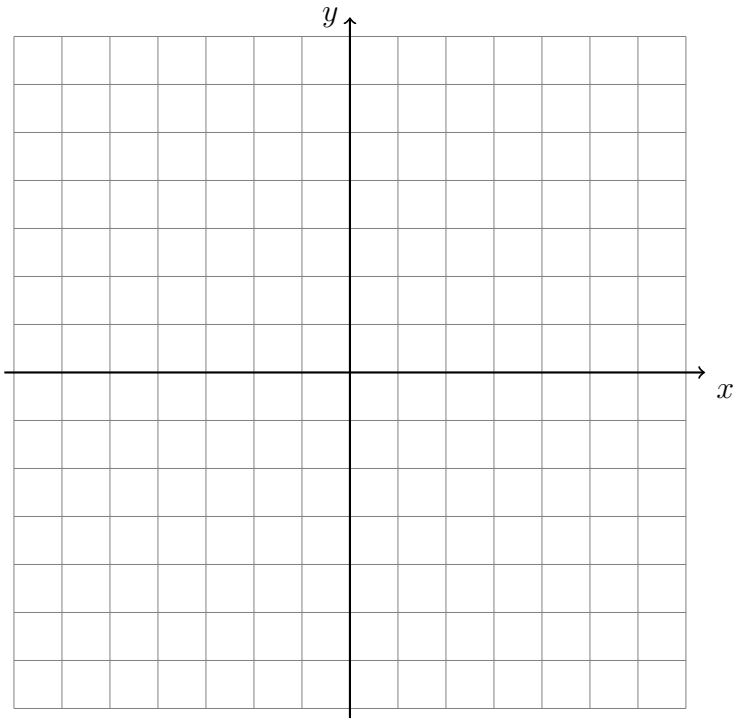
5. Graph the line $y = \frac{2}{3}x - 2$ after filling in the values in the blanks.

   y-intercept = _____

   Slope = _____



In the following two problems, solve for the value of x.

6. $12 = 5x - x$

7. $\frac{1}{4}(12 - 8x) = x$

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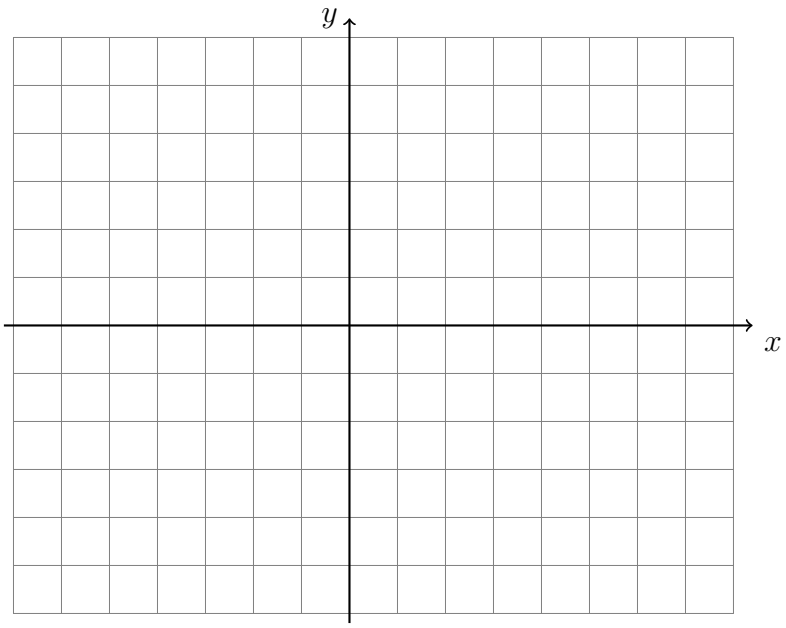
8. (a) For the function $y = |x - 1| - 2$, fill in the T-chart, plot the points, and draw the line.

x	$y = \lvert x - 1 \rvert - 2$



(b) Write down the values for x when $y = 0$.

$x_1 =$

$x_2 =$

(c) Circle the row for the y-intercept.

In the following two problems, simplify by collecting like terms.

9. $3x^2 - 3x + 5 - 2x^2 - x - 4$

10. $4(a^2 - 2a + 1) - 3(a^2 - a + 2)$

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11. After lunch on the day of the math test, Dr. Huson took 12 students for dessert. Some students wanted a snow cone, which cost \$2.50 each, and the others got cake, which cost \$3.00 each. The total cost was \$31.00. (Dr. Huson did not eat) How many students got each kind of dessert?

    Use x for the number of snow cone orders and y for the number of cake orders.

    (a) Complete the table of costs below. (the first row is done as a hint)

x	y	cost for snow cones	cost for cake	total cost
0	12	\$0.00	\$36.00	\$36.00
2	10			
4	8			
6	6			
8	4			
10	2			
12	0			

    (b) Complete the two equations modeling the situation, one adding up to 12 people, the other adding up to \$31.00.

    $x + y =$ _____

    _____ $\times x +$ _____ $\times y =$ _____

    (c) Circle the row in the table that has the correct total. Write down how many students wanted ice cream and pie (x and y).

    $x =$ _____

    $y =$ _____

    (d) Check your answer.

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Distribute

12. $(x+2)(x+3)$

13. $(x+4)(x+4)$

Factor each expression

14. x^2+8x+7

15. $x^2+7x+10$

Solve for the value of x.

16. $5=\frac{1}{2}x+2x-10$

17. Given $f(x)=3x+5$. Simplify $f(3)$.

18. Given $f(x)=-\dfrac{(6+3x)}{13}$. Simplify $f(-2)$.