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16 November 2018

Solve each problem. Show your work, and check your answer.

Exam

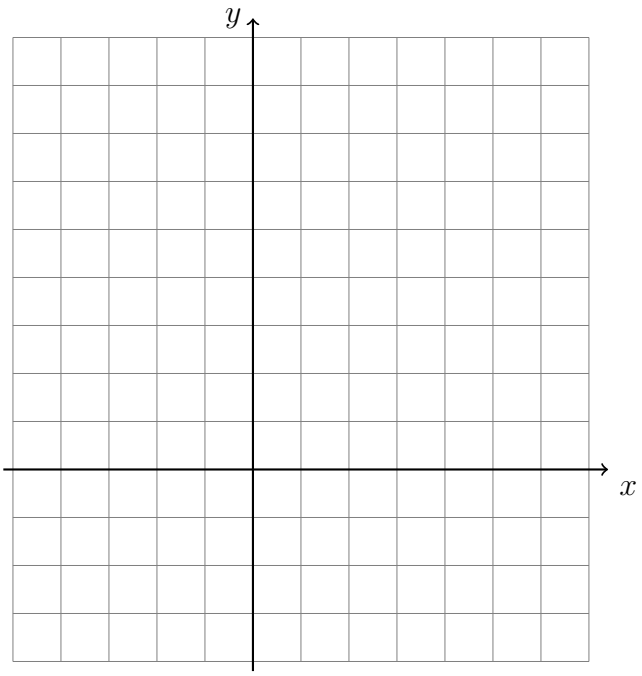
1. Find the slope and y-intercept of the function from the table. Show the line differences.

x	$f(x)$
-1	-1
0	1
1	3
2	5
3	7

Slope = _____

y-intercept = _____

Graph the function as a line over the domain $-1 \leq x \leq 3$.



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

2. $10 = 3x - x$

3. $\frac{1}{2}(6 - 2x) = 2x$

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4. A new band charges \$300 to play for a party plus \$120 per hour. The total for BECA's 10th grade prom party was \$900.

   (a) Make a table with x the number of hours and the cost. Start with $x = 0$

x hours	total cost
0	
1	
2	
3	
4	
5	
6	

   Show the row differences. Circle the row in the table with the right cost.

   (b) Write an equation for the problem of the form $y = mx + b$, and solve it for x

   (c) Check the answer

   (d) Spicy: How much would be a tip for the band of 15% on the total charge?

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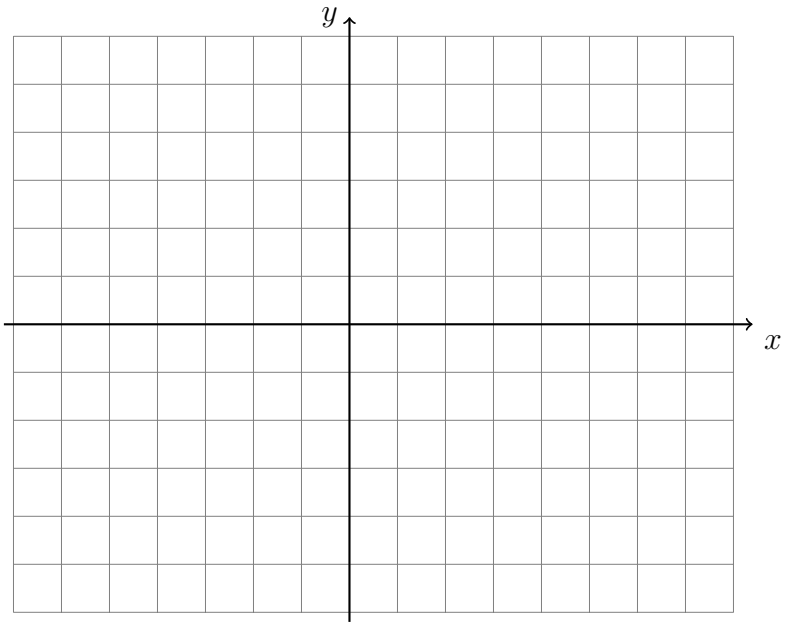
5. (a) For the function $y = \frac{1}{2}x - 1$, fill in the T-chart, plot the points, and draw the line.

x	$y = \frac{1}{2}x - 1$



(b) Write down the slope and y-intercept of the line.

$m =$

$b =$

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

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

6. $4x^2 + 3x - 7 - 2x^2 - x + 4$

7. $3(a^2 - 2a + 1) - 2(a^2 - a - 4)$

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8. After lunch on the day of the math test, Dr. Huson took 12 students for dessert. Some students wanted ice cream, which cost \$2.25 each, and the others got pie, which cost \$3.50 each. The total cost was \$32.00. (Dr. Huson did not eat) How many students got each kind of dessert?

   Use x for the number of ice cream orders and y for the number of pie orders.

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

x	y	cost for ice creams	cost for pies	total cost
0	12	\$0.00	\$42.00	\$42.00
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 \$32.00.

   $x + y =$ _____

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

   (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

9. $(x+1)(x+5)$

10. $(x+3)(x+3)$

Factor each expression

11. x^2+6x+5

12. $x^2+7x+12$

Solve for the value of x.

13. $11=\frac{1}{3}x+2x-10$

14. Given $f(x)=4x+7$. Simplify $f(2)$.

15. Given $f(x)=-\dfrac{(12+4x)}{11}$. Simplify $f(-3)$.