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

Exam - Part B

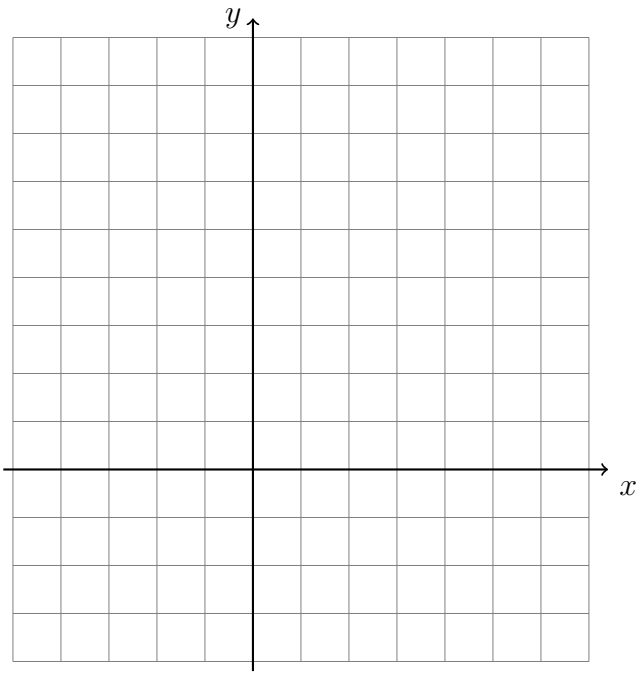
1. Find the slope and y-intercept of the function from the table. Show the line differences.

x	$f(x)$
-1	0
0	1
1	2
2	3
3	4

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. $9 = 4x - x$

3. $\frac{1}{2}(12 - 2x) = 2x$

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4. A new band charges \$250 to play for a party plus \$125 per hour. The total for BECA's 10th grade prom party was \$750.

   (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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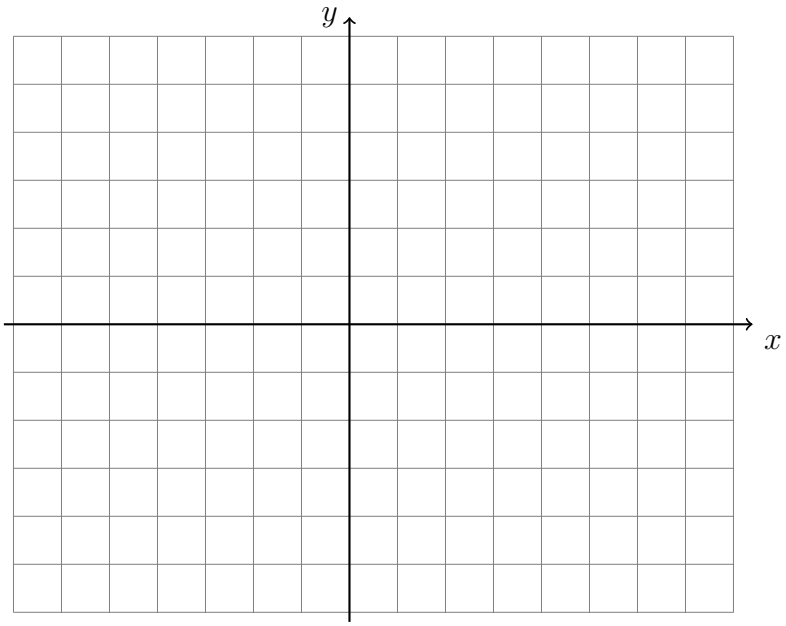
5. (a) For the function $y = \frac{2}{3}x + 1$, fill in the T-chart, plot the points, and draw the line.

x	$y = \frac{2}{3}x + 1$



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

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

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8. 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.

   $x + y =$ _____

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

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

10. $(x+4)(x+4)$

Factor each expression

11. x^2+8x+7

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

Solve for the value of x.

13. $5=\frac{1}{2}x+2x-10$

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

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