

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

**Classwork: Word problem Wednesday**

1. At college, the phone company charges \$25 for installation plus \$28 per month. The total you saved over the summer for service was \$137. 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. An acting consultant charges \$75 for an initial meeting plus \$35 per hour for consulting work. Your uncle gave you \$300 for acting 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  $y = mx + b$

3. A cleaner charges \$65 per day plus \$18 per hour. If you allow \$200 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 DJ charges \$200 to play for a party plus \$120 per hour. The total for Mr. Odouard's college reunion party was \$740. 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  $y = mx + b$

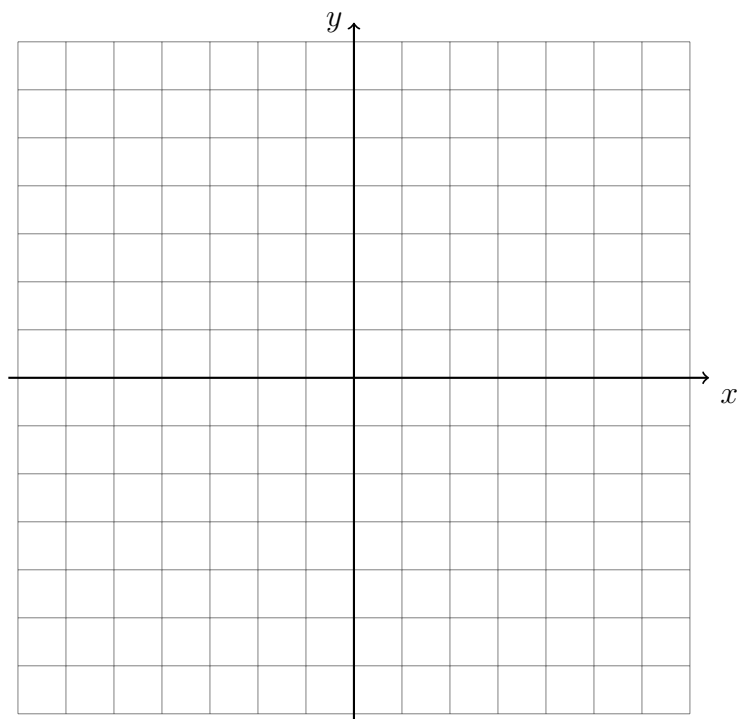
(c) Solve the equation for  $x$

(d) Check the answer

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.  $12 = 5x - x$

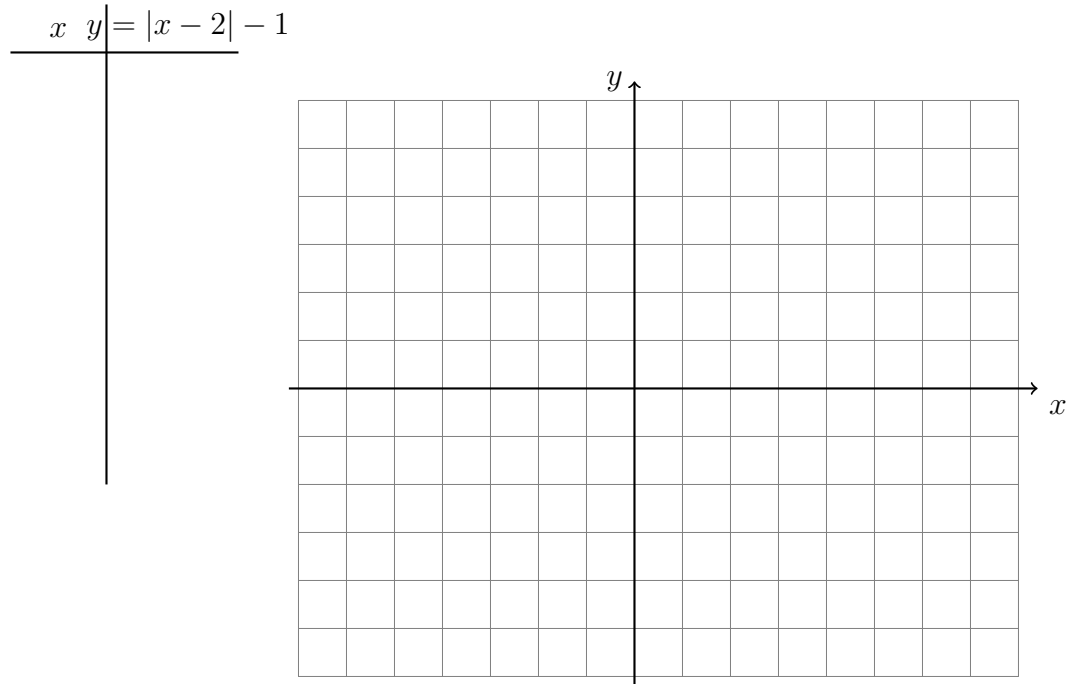
7.  $\frac{1}{4}(12 - 8x) = x$

In the following problems, write down the initial value and the slope. Solve for  $y$  if necessary.

8.  $y = 3x + 3$

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

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



- (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.

11.  $3x^2 - 3x + 5 - 2x^2 - x - 4$

12.  $4(a^2 - 2a + 1) - 3(a^2 - a + 2)$

13. 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.

$$x + y = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \times x + \underline{\hspace{2cm}} \times y = \underline{\hspace{2cm}}$$

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

$$x = \underline{\hspace{2cm}}$$

$$y = \underline{\hspace{2cm}}$$

- (d) Check your answer.

Distribute

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

Factor each expression

16.  $x^2 + 8x + 7$

15.  $(x + 4)(x + 4)$

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

Solve for the value of  $x$ .

18.  $5 = \frac{1}{2}x + 2x - 10$

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

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