

1. Convert 343 meters per second to miles per hour.

$$777.75 \text{ mi/hr.}$$

2. Elizabeth buys food for the Math Department. She buys some sub sandwiches and some desserts. If the subs are \$5.00 each and desserts are \$2.00 each, she uses $5x + 2y \leq 75$ to figure out how many of each she can purchase.

- a. Give the appropriate vocabulary word for each of the following:

75: constant

5x: term

2: coefficient

y: variable

- b. Explain what each part of the equation means IN CONTEXT of the situation.

2y: total \$ for desserts

x: # of subs

5: cost per sub

75: budget

3. Solve the equation. Use properties of equality to justify each step. $5(x + 9) = 9(x + 7) - 2$

know these!

$$x = -4$$

4. Brad is a waiter, he gets paid \$5.75 per hour, and he gets tips. He works an 8 hour shift and took home \$83.50.

a. Write an equation for the situation: $y = 5.75x + 37.50$

b. How much did he make in tips?

\$37.50

c. If he works a twelve hour shift how much would he make?

\$106.50

5. Solve the system of equations: $-7x - 8y = 9$
 $-4x + 9y = -22$

(1, -2)

6. Solve the system of equations: $x = 7y - 2$
 $4x - 5y = 15$

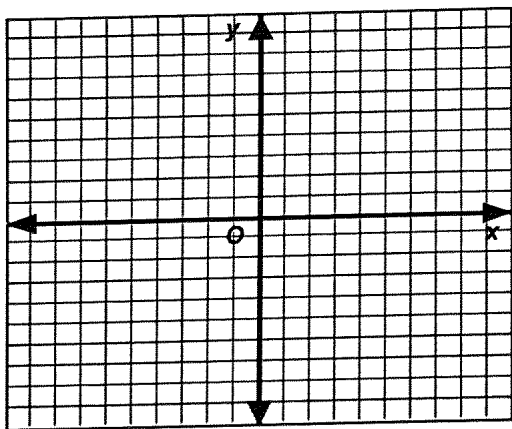
(5, 1)

7. Mike and Carlos are selling cookie dough for a school fundraiser. Customers can buy packages of chocolate chip cookie dough and packages of gingerbread cookie dough. Mike sold 8 packages of chocolate chip cookie dough and 12 packages of gingerbread cookie dough for a total of \$364. Carlos sold 1 package of chocolate chip cookie dough and 4 packages of gingerbread cookie dough for a total of \$93. Find the cost of one package of chocolate chip cookie dough and one package of gingerbread cookie dough.

Write 2 equations!

Choc Chip \$17
Gingerbread \$19

8. Graph the system of linear inequalities and answer the questions that follow. $4x - 3y \leq 9$
 $x + 3y > 6$



↓
graph both
- include shading
- know the difference between dashed & solid lines

- a. Is (2,4) a solution to the system? Why or why not?

YES

- b. Is (-3,3) a solution to the system? Why or why not?

NO

9. Write the equation of the line given $m = -\frac{4}{3}$ and goes through $(-6, 2)$.

$$y = -\frac{4}{3}x - 6$$

10. Write the equation of the line given $(8, 4)$ and $(12, 3)$.

$$y = -\frac{1}{4}x + 6$$

11. You and your friend were at the coffee shop all weekend cramming for the math final. The coffee shop was running a deal. If you buy a mug, you can get a discount on your cups of coffee. You bought 6 coffees that weekend and spent \$15.49. Your friend had 11 coffees and spent \$21.74.

a. Write a system of equations to represent this situation.

$$y = 1.25x + 7.99$$

b. How much was each cup of coffee?

$$\$1.25$$

c. How much was the mug?

$$\$7.99$$

d. Another friend stopped by to get some math help, and she had \$12. How many cups of coffee can she buy?

$$\approx 3 \text{ cups}$$

Simplify the expressions.

12. $(-4x^3y)(5x^4y^6)$

$$-20x^7y^7$$

13. $(-3x^5y^3)^3$

$$-27x^{15}y^9$$

14. $\frac{-12x^9y^2}{15xy^7}$

$$\frac{-4x^8}{5y^5}$$