



To the video!

Write your questions and thoughts here!

1.4 – Rewriting Equations

1

Do you recall....Solving for y?

Solve the following equations for y:

Algebra I
Section 4.4



1. $8x - 2y = 18$

2. $3x - 5y + 11 = 0$

3. $x - 3y = 14$

4. $x = 7 - 2y$

Commonly Used Area Equations:

Solve for the indicated variable in the parenthesis. Show all of your work!

5. $A = \frac{1}{2}bh$ (b)

6. $A = \pi r^2$ (r)

7. $A = \frac{1}{2}(b_1 + b_2)h$ (b_1)

Other Common Formulas:

8. Simple Interest
 $I = Prt$ (r)

9. Slope-Intercept
 $y = mx + b$ (b)

10. Temperature
 $F = \frac{9}{5}C + 32$ (C)

11. $\frac{x+z-w}{R} = 1$ (Z)

12. $\frac{x+y}{2} = A$ (Y)

13. The ratio of the bounciness of rust to the magnitude of exposure equals the Lateral Area of the rust particle. Solve this equation for bounciness.*

1.4 – Rewriting Equations

Write your questions and thoughts here!

14. The Pythagorean Theorem of Baseball is used to predict the number of wins a team will have (W) when given the number of runs scored (R), the number of runs the opponents scored (A) and the total number of games player (T).

a. Solve the formula for W :
$$\frac{W}{T} \approx \frac{R^2}{R^2 + A^2}$$

b. In 2012, the Yankees scored 804 runs while their opponents scored 668 runs throughout 162 games. Estimate the number of wins the Yankees had. (The actual number of wins for the NY Yankees in 2012 was 95.)

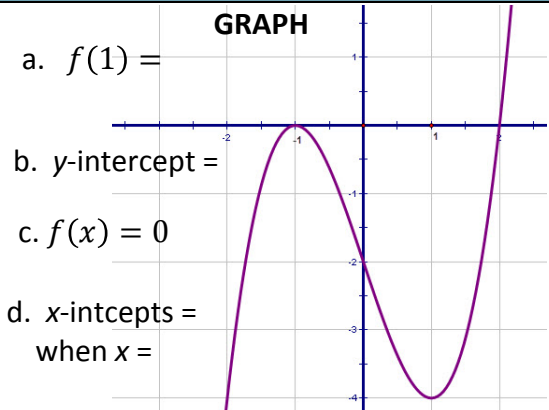
15. The total number of miles a honeybee can fly in its lifetime is modeled by the equation:

$$T = m(D - 21) \quad \text{where: } \begin{array}{l} T = \text{total number miles flown} \\ m = \text{miles flown each day} \\ D = \text{lifetime in days} \end{array}$$

Some bees fly up to 55 miles per day and their muscles can fly a total 500 miles before giving out (and the bee dies). Solve the equation for D and find the total number of days the bees live.

Now summarize what you have learned!

ALGEBRA SKILLZ!



SIMPLIFY

Simplify the radical

a. $\sqrt{44}$

b. $4\sqrt{28}$

SOLVE:

Solve for x . Hint: Use the LCM!!

a. $\frac{x}{4} + \frac{2x}{6} = 7$

FACTOR:

b. $x^2 - 20x + 100$

1.4 – Rewriting Equations Practice

Solve for the indicated variable in the parenthesis. Show all of your work!

1. $P = Irt$ (t)

2. $y = 4x - 2$ (x)

3. $P = 2(L + W)$ (W)

4. $A = 4r^2$ (r)
Hint: square root!

5. $V = \pi r^2 h$ (h)

6. $R = \frac{E}{I}$ (I)

7. $A = \frac{a+b+c}{3}$ (a)

8. $V = LWH$ (L)

9. $D = RT$ (T)

10. $P = \frac{R-C}{N}$ (R)

11. $\frac{x+z-w}{R} = 1$ (Z)

12. $3x - 5y - 11 = 0$ (y)

SAT REVIEW

MULTIPLE CHOICE

If n is a constant and $2a + 5 = 3na + 5$ for all values of a , what is the value of n ?

- (A) 5
- (B) 3
- (C) 2
- (D) $\frac{3}{2}$
- (E) $\frac{2}{3}$

GRID IN

What is the greatest 3-digit integer that has a factor of 10?

•	•	•	•
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8

1.4 – Rewriting Equations Application

1. Solve for y : $3x - 5y = 12$

2. Solve for z : $\frac{w-z}{3} = k$

3. Shoe sizes and foot length are related by the formula $S = 3F - 24$, where S represents the shoe size and F represents the length of the foot, in inches.

a. Solve the formula for F .

b. How long is someone's foot who wears a size 10 shoe?

4. To convert temperature from Fahrenheit into Kelvin, we use the formula: $\frac{5}{9}(F - 32) + 273 = K$

a. Solve the equation for F .

b. Find the difference in degrees Fahrenheit between our solar system's warmest and coldest planets:

Temperatures of Planets:

1. Uranus	59K
2. Neptune	60K
3. Saturn	95K
4. Jupiter	124K
5. Mars	212K
6. Venus	230K
7. Earth	254K
8. Mercury	434K

5. The cost of operating an electrical device is given by the formula $C = \frac{Wtp}{1000}$ where W is the power in watts, t is the time in hours, and p is the cost in cents per kilowatt-hour.

a. Solve the equation for W .

b. Suppose you have been given the task of engineering this product knowing that in your state the cost of electricity is 18 cents per kilowatt-hour and the device would run for approximately 8 hours at a time. How much power would the device use if you were given a \$5000 budget?

c. Solve the equation for t .

d. You know that in a different state, the electricity costs only 10 cents per kilowatt-hour. How much longer in hours could the device run using the same amount of power?