Algebra 1 Unit 3 Grouping words: 'of' Sling-shot words: than, to, from

Name: _____ Date: _____ Period: ____

Solving Equations - Application

Notes

Write an ~~equation~~ expressions.

1. The sum of twice x and five (2x+5)
2. One fourth the difference of m and ten (m-10) $\frac{1}{4}(m-10)$
3. Five less than three times y 3y-5
4. Three times the sum of six and h 3(6+h)
5. Two thirds the difference of three times t and eight $\frac{2}{3}(3t-8)$
6. Seven fewer than four times k 4k-7
7. The sum of one half of g and three $(\frac{1}{2}g+3)$
8. Twice the difference of f and one 2(f-1)
9. Six more than twice v 2v+6
10. Nine less than the difference of x and y (x-y)-9

For each of the scenarios, define the variable, set up an equation, and solve.

1. Three times the sum of a number and five is twenty seven. What is the number?

n: number

3(n+5)=27

PEMDAS

$\frac{3(n+5)}{3}=\frac{27}{3}$

n+5=9

-5 -5

n=4

3n+15=27

-15 -15

$\frac{3n}{3}=\frac{12}{3}$

n=4

3(4+5)=27

3(9)=27

27=27✓

$E = \frac{2}{3}(3 \cdot m - 15)$

2. The formula to find energy is two-thirds the difference of three times the mass and fifteen. Write an equation that can be used to find energy. Solve the equation if the energy is 30 joules.

$E = 30$

E: energy (DV)

m: mass (IV)

$E = \frac{2}{3}(3m - 15)$

$30 = 2m - 10$

$+10 \quad +10$

$\frac{40}{2} = \frac{2m}{2}$

$20 = m$

3. It is a commonly used guideline that for an average American child, their maximum adult height, ***a***, will be one inch less than twice their height at age two, ***c***. If Micah's adult height is 69 inches, what was her height at age 2? Write an equation and solve.

$a = 69$

a: Adult height

c: height at age 2

$a = 2c - 1$

$69 = 2c - 1$

$+1 \quad +1$

$\frac{70}{2} = \frac{2c}{2}$

$35 = c$

35 inches

4. An airplane's altitude in feet during its descent for landing can be found using the function where the altitude, ***a***, is 300 times the difference of 100 feet and ***x***. If ***x*** represents the horizontal distance in miles from where the plane begins its descent, write an equation that represents this situation.

a: altitude

x: horizontal distance

$a = 300(100 - x)$