1 - 3
Open Sentences

open sentence: math statement with one or more variables

* can be true or false depending what you plug in

$5 + x = 8$

2 false 3 true

solution: value that makes it true

equation: sentence with an = sign

Ex: Find the solution set for the equation 6n + 7 = 37 if the replacement set is { 3, 4, 5, 6, 7 }.

$6 \cdot 3 + 7 = 37$

$6 \cdot 4 + 7 = 37$

$6 \cdot 5 + 7 = 37$ ✓

$6 \cdot 6 + 7 = 37$

$6 \cdot 7 + 7 = 37$

Ex: Find the solution set for the equation $5(x + 2) = 40$ if the replacement set is { 3, 4, 5, 6, 7 }.

Ex: Solve $\dfrac{13 + 2(4)}{3(5 - 4)} = p$

$$\frac{13+8}{3(1)} = p$$

$$\frac{21}{3} = p$$

$$7 = p$$

Ex: Solve $\dfrac{5(8+2)}{18-(5-3)^3} = k$

$$\frac{5(10)}{18-2^3} = k$$

$$\frac{50}{18-8} = k$$

$$\frac{50}{10} = k$$

$$5 = k$$

inequality: open sentence using

$<, \leq, >, \geq$

$x < 2$

Ex: Find the solution set for
$18 - y < 10$ if the replacement set is {7, 8, 9, 10, 11, 12}.

$18-7<10$

$18-8<10$

$18-9<10$ ✓

$18-10<10$ ✓

$18-11<10$ ✓

$18-12<10$ ✓

Why did this type of problem have more than one solution?

Ex: Find the solution set for
$z + 11 > 32$ if the replacement set is $\{20, 21, 22, 23, 24\}$.

No Homework! :)