Key

Cornell Notes	Topic/Objective: Solving one-variable equations with variables on both sides of the equal sign that represent mathematical and real world problems using rational number coefficients and constants.	Name:
AVID Decades of College Dreams		Class/Period:
		Date:

Essential Question: How do I solve an equation using mathematical symbols.

Questions:	Notes:
	Remember:
	* The goal is to find out what number the variable represents
	* We need to **isolate the variable** and get all variables on one side of the equal sign, and all numbers on the other side
	* Use **inverse operations** to get variables on one side and numbers on the other side
	* You must do the **exact same thing** to both sides of the equation
	* In the end we want a single positive variable (like x) equal to a number.
	* The unknown value can be any rational number (positive, negative, decimal, fraction)
	Flex Gym charges a membership fee of $150.00 plus $40.50 per month to join the gym. A rival gym, Able Gym, charges a membership fee of $120.00 plus $46.75 per month. Find the number of months for which you would pay the same total fee to both gyms. Let x be the # of months $150 + 40.50x = 120 + 46.75x$ $-40.50x \quad\quad -40.50x$ $150 = 120 + 6.25x$ $-120 \quad\quad -120$ $\frac{30}{6.25} = \frac{6.25x}{6.25}$ $x = 4.8$ months
	A water tank holds 256 gallons but is leaking at a rate of 3 gallons per week. A second water tank holds 384 gallons but is leaking at a rate of 5 gallons per week. After how many weeks will the amount of water in the two tanks be the same? Let x be the # of weeks $256 - 3x = 384 - 5x$ $+5x \quad\quad +5x$ $256 + 2x = 384$ $-256 \quad\quad -256$ $\frac{2x}{2} = \frac{128}{2}$ $x = 64$ weeks

Questions:	Notes:
	Solve the following equation: $22x + 100 = 25x + 70$ Math Symbols: $22x + 100 = 25x + 70$ $-22x \quad -22x$ Steps in Words: Use inverse operations to get variables on same side of = sign Simplify $100 = 3x + 70$ $-70 \quad -70$ Use inverse operations to get numbers on same side of = sign Simplify $30 = 3x$ $\div 3 \quad \div 3$ $10 = x$ Use inverse operations to isolate variable Simplify **Check your work by substituting your answer in for *x* at the beginning of the problem. Your answer is correct if you get two numbers that are equal to each other.** $22(10) + 100 = 25(10) + 70$ $220 + 100 = 250 + 70$ $320 = 320$ ✓ $x = 10$ is correct
	Solve the following equation: $24 - 2x = 8x + 4$. Use the steps listed above if needed. $24 - 2x = 8x + 4$ $+2x \quad +2x$ $24 = 10x + 4$ $-4 \quad -4$ $\frac{20}{10} = \frac{10x}{10}$ $2 = x$ or $x = 2$
Summary:	