BASIC STEPS & EXAMPLES FOR: SOLVING **EQUATIONS**

Step 1: If you have like terms on the same side then combine them, otherwise go to step 2.

Step 2: You must isolate the variable by itself. You do this by putting variables on one side and numbers on the other.
Do the inverse operation (the opposite operation) to get rid of a number. What you do to one side you must do to the other.

Step 3: Once the variables are on one side and the numbers are on the other, then you do the inverse operation for the coefficient.

NOTE: The Equal/Inequality signs separate one side from another.

ONE SIDE	=	OTHER SIDE	**EXAMPLE 1**
$3x + 7$	=	34	It shows that we are adding 7, SO
-7		-7	**Step 2** we subtract 7 from both sides
$3x$	=	27	The variable is multiplied by 3, SO
$\frac{3}{3}$		$\frac{27}{3}$	**Step 3** divide both sides by 3
x	=	9	**ANSWER** Bring down the results

ONE SIDE	=	OTHER SIDE	**EXAMPLE 2**
$-4x - 12$	=	36	It shows that we are subtracting 12, SO
$+12$		$+12$	**Step 2** we add 12 to both sides
$-4x$	=	48	The variable is multiplied by -4, SO
$\frac{-4}{-4}$		$\frac{48}{-4}$	**Step 3** divide both sides by -4
x	=	-12	**ANSWER** Bring down the results

ONE SIDE	=	OTHER SIDE	**EXAMPLE 3**
$\frac{x}{-3} - 6$	=	5	It shows that we are subtracting 6, SO
$+6$		$+6$	**Step 2** we add 6 to both sides
$\frac{x}{-3}$	=	11	The variable is divided by -3, SO
$\frac{-3}{1} \times \frac{x}{-3}$	=	11×-3	**Step 3** we multiply both sides by -3
x	=	-33	**ANSWER** Bring down the results

ONE SIDE	=	OTHER SIDE	**EXAMPLE 4**
$-20X + 17 + 12x$	=	$-3 + -52$	You have like terms on both sides,
$-20X + 12x + 17$	=	-55	**Step 1** SO combine them before Step 2
$-8x + 17$	=	-55	**Step 2** It shows that we are adding 17, SO
-17		-17	we subtract 17 from both sides
$-8x$	=	-72	The variable is multiplied by -4, SO
$\frac{-8}{-8}$		$\frac{-72}{-8}$	**Step 3** divide both sides by -4
x	=	-9	**ANSWER** Bring down the results