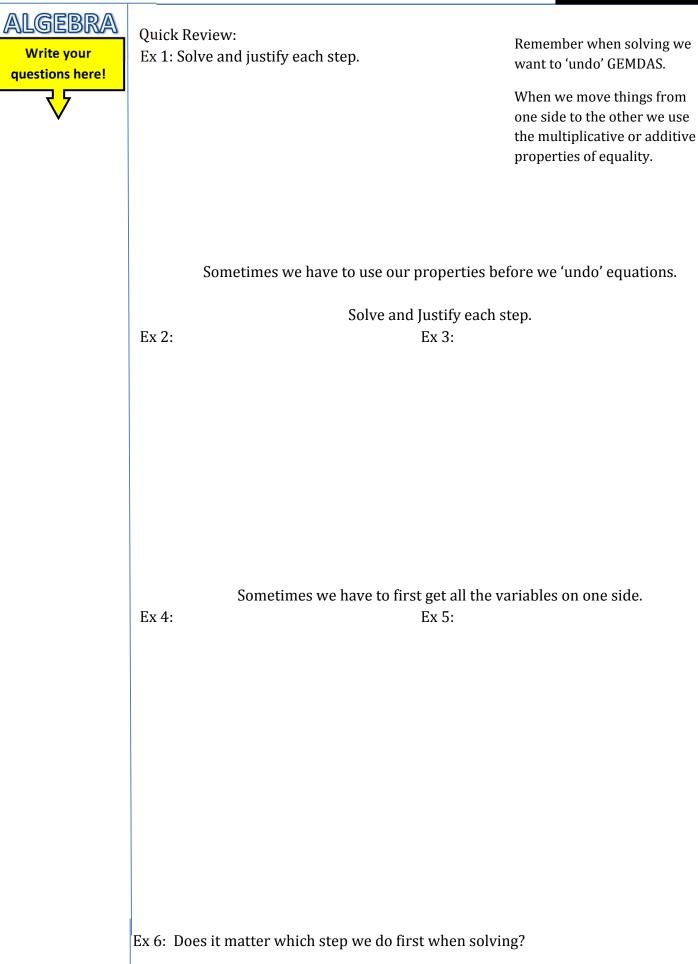
2.2 Solve Equations

NOTES



Pick one of the three starting points, pause the video and solve the equation. Then compare to the other starting points.

Start by subtracting 3x on both sides	Start by subtracting 4 on both sides	Start by adding 16 to both sides
Ex 7: Solve the following th	ree equations and then compare the	solution sets.
a)	b)	c) SMP #2

Describe how you'll know when

The solution set is $\{\ \}$ or has no solution

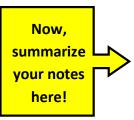
The solution set is $\ensuremath{\mathfrak{R}}$ or is all real numbers.

You try: Find the solutions sets for the following.

2) Solve and Justify each step.

1)

SUMMARY:



2.2 Solve Equations

Directions: For each solution to the equations below justify each step with the given property.			
1) $2 + m + 7 = -11 + 5m$	2) $7 + 3v = -8 + 6v$		
2 + 7 + m = -11 + 5m	7 - 3v = -8		
	/ 5/ = 0		
9 + m = -11 + 5m	-3v = -15		
20 + m = 5m	v = 5		
20 = 4m	{5}		
5 = m			
{5}			
3) -156 = -6(-7m + 5)	4) $3(1-6x) - 3(1+2x) = 0$		
-156 = 42m - 30			
	3 - 18x - 3 - 6x = 0		
-126 = 42m			
	3 - 3 - 18x - 6x = 0		
-3 = m	24=0		
{-3}	- 24x = 0		
{-5}	x = 0		
	A = 0		
	{0}		
Directions: Solve each equation. Put your solution into set notation.			
5) $15 + n - 6n = 7n + 3n$	$6)\frac{-9+n}{13} + 10 = 8$		
	³ 13		

7) $240 - 9(E_{xx} + E)$	(0) $(0 + 7x)$ $0(1 + x) = 74$
7) $240 = -8(-5v + 5)$	8) - (8 + 7x) - 8(1 + x) = 74
9) $-1 = \frac{r-1}{2} - 5$	10) $4x + 9 = x + 3 + 3x$
$9j-1 = \frac{1}{2} - 5$	$10j 1\mathbf{x} + \mathbf{y} = \mathbf{x} + \mathbf{y} + \mathbf{y}$
11) - 4(1 + 4a) = 124	12) 82.296 = -2.7(6.1 – 5.9r)
	, , , , , , , , , , , , , , , , , , , ,
13) 8 = -6(3n - 1) + 2(9n + 1)	14) -6(8 - 7m) = -3(-5 - 7m)

Directions: Simplify each expression.		
$(15)\frac{2}{3}(6x-21)$	16) 4 - 3(2 - x)	17) 3(2x + 7) - 4(x - 2)
3		

2.2 Solve Equations

WRAP UP

Directions: For each solution to the equations below justify each step with the given property.	Directions: Solve each equation. Put your solution into set notation.
1) $2x - 4 + 5x = 6x + 19$	2) $-8 - 8(8x + 4) = -8(-3x + 5) - 6x$
2x + 5x - 4 = 6x + 19	
7x -4 = 6x + 19	
x - 4 = 19	
x = 23	
{23}	

3) Solve the following equations by starting with the indicated step. Remember that as long as we do the same operation to both sides of the equation it will stay balanced and result in the same answer.

2x + 4 = 6x - 8

Subtract 4 from both sides Add 10 to both sides Divide both sides by 2

a) Which first step was the easiest one for you to start with? Justify your answer with a complete sentence.

b) What is odd about the second option? Explain in complete sentences.

c) Did the third option result in the same answer? Should it? Does this violate our mathematical properties? Construct a viable argument to support your solution.

EXIT TICKET -

The equation 3x+4=5x-4 has the solution set $\{4\}$.

a. Explain why the equation (3x+4)+4=(5x-4)+4 also has the solution set $\{4\}$.

b. Explain why the equation $\frac{3x+4}{3} = \frac{5x-4}{3}$ will also have the solution set {4}.

c. Which method would be more efficient in solving the original equation (a or b)? Explain your reasoning.