2.2 Solve Equations



Quick Review:

Ex 1: Solve and justify each step.

Remember when solving we want to 'undo' GEMDAS.

When we move things from one side to the other we use the multiplicative or additive properties of equality.

Sometimes we have to use our properties before we 'undo' equations.

Solve and Justify each step.

Ex 2: Ex 3:

Sometimes we have to first get all the variables on one side.

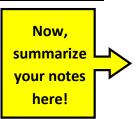
Ex 4: Ex 5:

compare to the other sta	rting 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 tha)	nree equations and then compare the	solution sets. c) SMP #2	
Describe how you'll know v	when		
The solution set is { } or ha	as no solution		
The solution set is ${\mathfrak R}$ or is a	ıll real numbers.		
You try: Find the solutions	s sets for the following.		
1)	2) Solve and Justify each step.		

Ex 6: Does it matter which step we do first when solving?

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

SUMMARY:



2.2 Solve Equation

Directions: For each solution to the equations below justify each step with the given property.

$$20 = 4m$$

Directions: Solve each equation. Put your solution into set notation.

3)
$$15 + n - 6n = 7n + 3n$$

$$4)\frac{-9+n}{13} + 10 = 8$$

$$6) - (8 + 7x) - 8(1 + x) = 74$$

$7)\frac{1+3a}{4} = 7$		8) $8 = -6(3n - 1) + 2(9n + 1)$	
// 4 - /			
D' ' C' I'C I			
Directions: Simplify each expression.	T		
$9)\frac{2}{3}(6x-21)$	10) 4 – 3(2 – x)		11) $3(2x + 7) - 4(x - 2)$

2.2 Solve Equations



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.