2.2 Solve Equations

NOTES

ALGEBRA

Write your questions here!

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:

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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 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 three equations and then compare the solution sets.

SMP #2

a)

b)

c)

Describe how you'll know when .....

The solution set is { } or has no solution

The solution set is $\Re$ or is all real numbers.

You try: Find the solutions sets for the following.

1)

2) Solve and Justify each step.

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SUMMARY:

Now, summarize your notes here!

2.2 Solve Equation

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

1) $2 + m + 7 = -11 + 5m$

$2 + 7 + m = -11 + 5m$ _____

$9 + m = -11 + 5m$ _____

$20 + m = 5m$ _____

$20 = 4m$ _____

$5 = m$ _____

{5}

2) $7 + 3v = -8 + 6v$

$7 - 3v = -8$ _____

$-3v = -15$ _____

$v = 5$ _____

{5}

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

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

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

5) $240 = -8(-5v + 5)$

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

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7) $\frac{1+3a}{4} = 7$	8) 8 = -6(3n – 1) + 2(9n + 1)

Directions: Simplify each expression.		
9) $\frac{2}{3}(6x - 21)$	10) 4 – 3(2 – x)	11) 3(2x + 7) – 4(x – 2)

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 2x + 5x – 4 = 6x + 19 _____ 7x -4 = 6x + 19 _____ x – 4 = 19 _____ x = 23 _____ {23}	2) -8 – 8(8x +4) = -8(-3x + 5) – 6x

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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.

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