Lesson 3.1 Solving Linear Equations with one Variable (Day 7)

Tuesday	My Thinking	Correct/Compare
$\frac{7x}{2} - \frac{1-x}{2} = 4$		

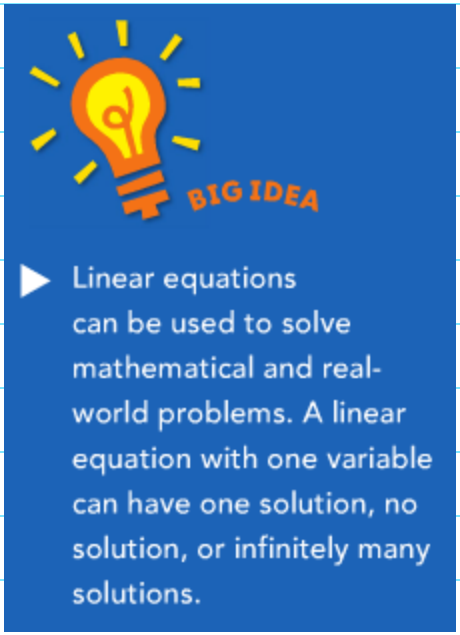
Lesson 3.1 Solving Linear Equations with one Variable (Day 7)

Tuesday	My Thinking	Correct/Compare
$\frac{7x}{2} - \frac{1-x}{2} = 4$		$x \equiv 1\frac{1}{8}$

Lesson 3.1 Solving Linear Equations with one Variable (Day 5)

Objective

TSW solve linear equations with one variable by simplifying expressions using distributive property, laws of equality, combining like terms and moving all the variables to one side of the equal sign.



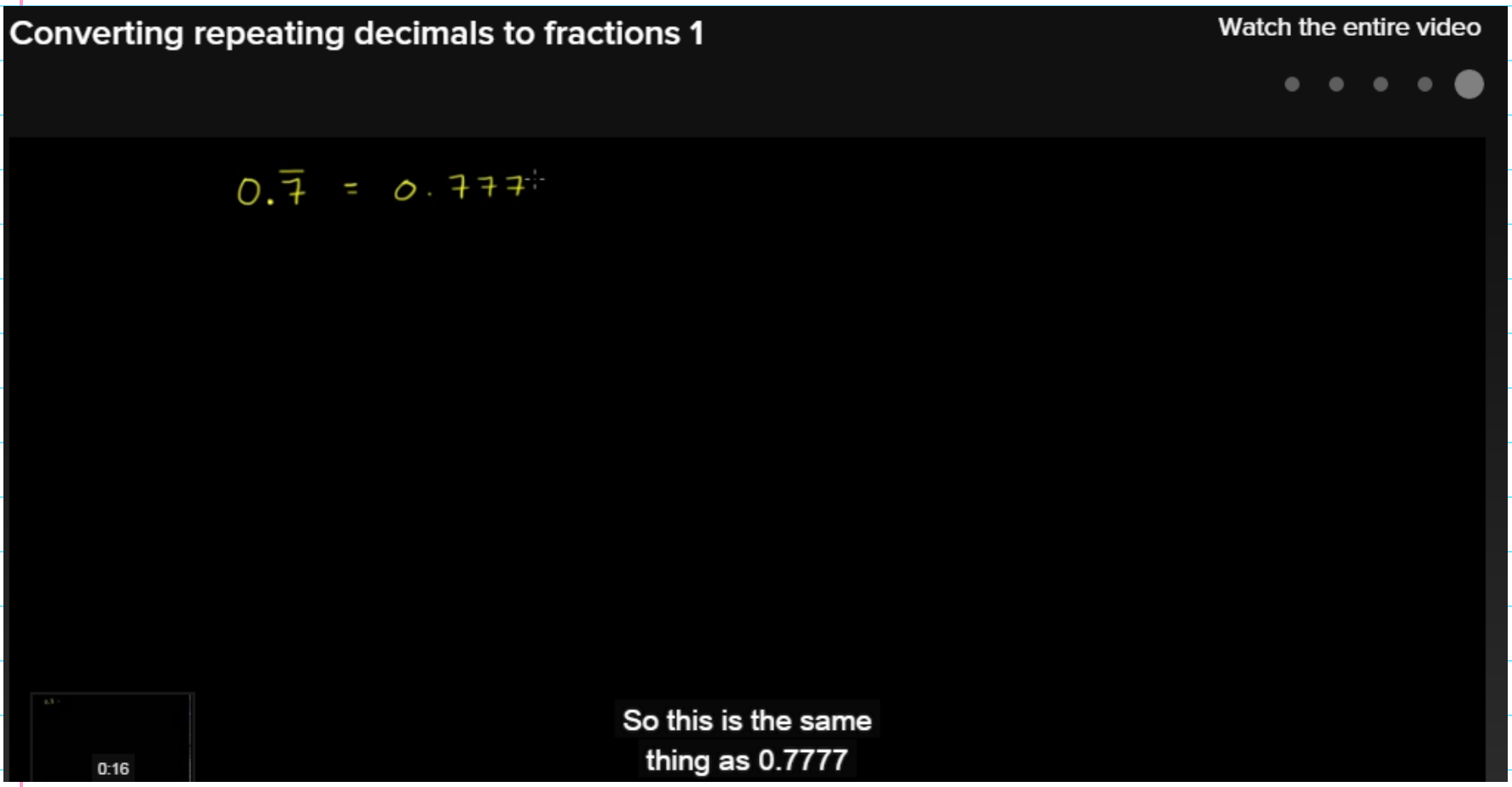
TSW write repeating decimals as fractions using linear equations

Common Core State Standards *8.EE.7 Solve linear equations with one variable*

8EE 7 Solve linear equations in one variable.
8EE 7a Give examples of linear equations in one variable with one solution, infinity many solutions, or no solutions
8EE 7b Solve linear equations with rational number coefficients

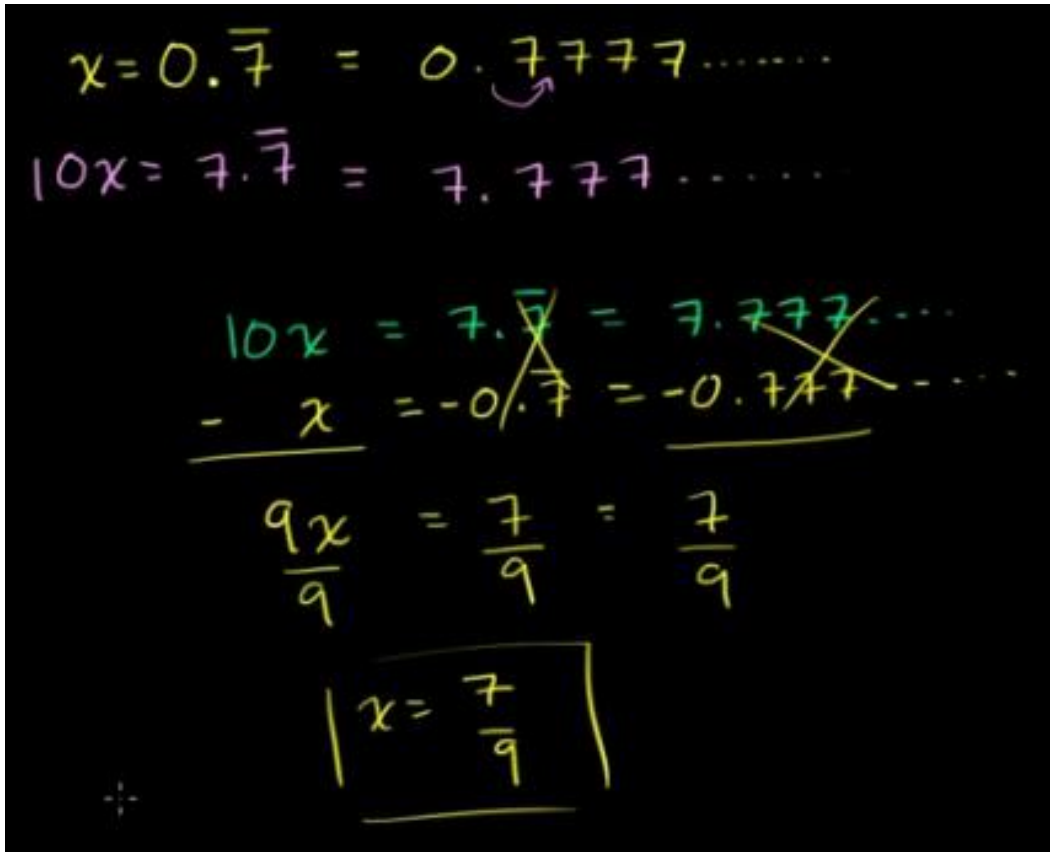
- **Mathematical Practices** *1 Solve problems/persevere 2 Reason 4 Model Mathematics 7 Look for and use structure*

Converting Repeating Decimals to Fractions



https://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/conv_rep_decimals/v/coverting-repeating-decimals-to-fractions-1

Converting Repeating Decimals to Fractions



Step 1: Assign variable to the repeating decimal

Step 2: Subtract X from 10X to get a terminating decimal

Step 3: Solve for X

Example 2

Write the decimal $0.1\overline{6}$ as a fraction.

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Example 2

Write the decimal $0.1\overline{6}$ as a fraction.

Solution

STEP 1 Assign a variable to the repeating decimal.

Let $x = 0.1\overline{6}$.

$x = 0.166666\ldots$ $\quad 10x = 1.6666666\ldots$

Notice that if you multiply both sides of this equation by 10, the infinite number of repeating digits does not change. So you can subtract one equation from the other to eliminate the infinite string of digits.

STEP 2 Subtract x from $10x$ to get a terminating decimal.

$10x - x = 1.\overline{6} - 0.1\overline{6}$ or

$9x = 1.5$

$$\begin{array}{rl} 10x = & 1.6666666\ldots \\ -\ x = & -0.1666666\ldots \\ \hline 9x = & 1.50000 \end{array}$$

STEP 3 Solve for x.

$\frac{9x}{9} = \frac{1.5}{9}$ Divide both sides by 9.

$x = \frac{1}{6}$ Simplify.

$\frac{1.5}{9} = \frac{3}{18} = \frac{1}{6}$

So, $0.1\overline{6} = \frac{1}{6}$.

Step 1: Assign variable to the repeating decimal

Step 2: Subtract X from 10X to get a terminating decimal

Step 3: Solve for X

Lesson 3.1 Solving Linear Equations with one Variable (Day 6)

Independent Practice #1-4

Name:_____ Independent Practice #1-4

Practice 3.1

Write each repeating decimal as a fraction. Show your work.

1. $0.\overline{8}$
2. $0.\overline{1}$
3. $5 - 3(x - 7) = 2(2 - x) - 8$

Course 3

Challenge- Solve created equation/ "Pick a pumpkin"

-Create Word-toons

Lesson Check –#1 Write repeating fractions as a decimal