

Notes:

Solving Fractional Equations

8.EE.7

Created for you by Ms. Nhoetsubanh

Fractional Equations are equations that contains fractions.

Example 1: Solve for x.

$$\overset{LCD}{12} \cdot \left[\overset{2 \times 2}{6} x + \overset{12 \div 2}{2} = \overset{12 \div 3}{4} \right]$$

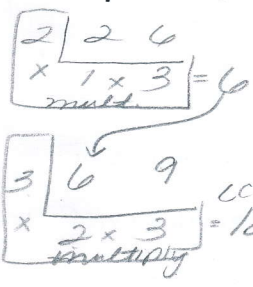
$$\begin{aligned} 2x + 6 &= 9 \\ -6 \quad -6 \\ \hline 2x &= 3 \\ \frac{2x}{2} &= \frac{3}{2} \\ x &= 1\frac{1}{2} \end{aligned}$$

Steps

1. We can clear the denominators by first identifying the least common denominator. In this case the LCD of 6, 2, and 4 is 12.
2. Multiply the entire equation by the LCD using distributive property.
3. Simplify.
4. Use inverse operations.

Example 2: Solve for x:

$$\overset{LCM}{18} \left[\overset{18}{2} x - \overset{3}{18} x = \overset{2}{18} \right]$$



$$\begin{aligned} 9x - 3x &= 2 \\ 6x &= 2 \\ \frac{6x}{6} &= \frac{2}{6} \\ x &= \frac{1}{3} \end{aligned}$$

Name: Key
Math 7H - Oct. 25

Glue on page 63

Example 3: Solve for x:

$$\frac{1}{6} = \frac{1}{12} + \frac{1}{8}x$$

$$4 = 2 + 3x$$

$$\begin{array}{r} -2 \\ 4 \\ \hline 2 = 3x \end{array}$$

$$x = \frac{2}{3}$$

Example 4: Solve for a:

$$\frac{2}{3}a - 9 = -29$$

$$+9 \quad +9$$

$$\frac{2}{3}a = -20$$

$$\frac{2}{3}a = -\frac{60}{2}$$

$$a = -30$$

Example 5: Solve for k:

$$\frac{2k+5}{9} = -3$$

$$\frac{2k+5}{-5} = \frac{-27}{-5}$$

$$\frac{2k}{2} = \frac{-32}{2}$$

$$k = -16$$

HOMEWORK:

Show your work on page 64 & 65 for #s 1 - 7.

Directions: Solve the equations by clearing the decimals.

1) $\frac{1}{6} = \frac{2}{3}y - \frac{1}{2}$	4) $\frac{1}{3}h - \frac{1}{2} = \frac{1}{6}$
2) $\frac{1}{2}a - \frac{1}{3}a = -2$	5) $\frac{1}{5}x - \frac{3}{10} = \frac{1}{20}x$
3) $\frac{3}{8}b - \frac{1}{4}b = 3$	6) $\frac{2x+6}{3} = 9$

Review

7) Solve for x. $6(2x-5) + 4x = 11x - 22$

8) What is $(-12x + 7)$ subtracted from $(5x - 6)$?

$$(5x - 6) - (-12x + 7)$$

$$5x - 6 + 12x - 7$$

$$17x - 13$$

9) Given the expression: $x^2 + 6 - 8x - 6y - 3x - 5x - 3x = -11x$

a) How many terms are in the expression? 4

b) What is the coefficient of x^2 in the expression? 1

c) What is the constant in the expression? 6

10) The perimeter of a square is $16\frac{4}{5}$ feet. Find the length of each side of the square.

$P = 4 \text{ sides}$

$$16\frac{4}{5} = \frac{84}{5} \div 4 = 21$$

$$\frac{21}{5} \cdot \frac{1}{4} = \frac{21}{20} = 1\frac{1}{5} \text{ ft each}$$

