

Homework 2.5 Answer Key ODDS

1. $\frac{1}{x-8}, x \neq \pm 8$

3. $\frac{30x+7}{5x^2}, x \neq 0$

5. $\frac{8x+5}{x}, x \neq 0$

7. $\frac{1}{x+6}, x \neq 2, -6$

9. $\frac{3x^2-3x-4}{(x+1)(x-1)}, x \neq \pm 1$

Oct 1-10:13 AM

$$7. \frac{x+6}{x-2} \cdot \frac{x-1}{x^2+4x-12} = \frac{x^2+5x-6}{(x+6)(x-2)} - \frac{(x^2+4x-4)}{(x+6)(x-2)} = \frac{x^2+5x-6-x^2-4x+4}{(x+6)(x-2)}$$

$$\text{LCD} = (x+6)(x-2)$$

$$(x+6)(x-1) = x^2 - x + 6x - 6$$

$$= \frac{(x-2)}{(x+6)(x-2)} = \frac{1}{x+6}, x \neq -6, 2$$

$$8. \frac{x+2}{x-7} \cdot \frac{x^2+4x+13}{x^2-4x-21} = \frac{(x+2)(x+3)}{(x-7)(x+3)} - \frac{x^2+4x+13}{(x-7)(x+3)}$$

$$= \frac{x^2+5x+6}{(x-7)(x+3)} - \frac{(x^2+4x+13)}{(x-7)(x+3)}$$

$$= \frac{x^2+5x+6-x^2-4x-13}{(x-7)(x+3)}$$

$$= \frac{(x-7)}{(x-7)(x+3)} = \frac{1}{x+3}, x \neq -3, 7$$

Sep 29-9:25 PM

9. LCD: $(x+1)(x-1)$

$$\frac{\frac{4x}{x^2-1} + \frac{3x}{x+1} - \frac{4}{x-1}}{(x+1)(x-1)} = \frac{4x}{(x+1)(x-1)} + \frac{(3x)(x-1)}{(x+1)(x-1)} - \frac{(4)(x+1)}{(x-1)(x+1)} - 4(x+1)$$

$$= \frac{\cancel{4x} + 3x^2 - 3x - \cancel{4x} - 4}{(x+1)(x-1)} = \frac{3x^2 - 3x - 4}{(x+1)(x-1)}$$

$x \neq \pm 1$

$B = -12$
 $S = -3$
 $2, 6$
 $3, 4$

10. LCD = $(x+3)(x-1)$

$$\frac{\frac{2}{x+3} - \frac{x}{x-1} + \frac{x^2+2}{x^2+2x-3}}{(x+3)(x-1)} = \frac{(2)(x-1)}{(x+3)(x-1)} - \frac{(x)(x+3)}{(x-1)(x+3)} + \frac{x^2+2}{(x+3)(x-1)}$$

$$= \frac{2x-2 - x^2-3x + x^2+2}{(x+3)(x-1)}$$

$$= \frac{-x}{(x+3)(x-1)}, x \neq -3, 1$$

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Take out a loose leaf sheet of paper for your notes today.

Oct 1-3:48 PM

Notes 2-3, HW + notes 15 HW 2-3

A Combine Rational Expressions	B Solve Rational Equations
1. $\frac{x(1)}{x(6)} + \frac{(4)}{x} \frac{6}{6} = \frac{x+24}{6x}$ $\text{LCD} = 6x$ $6x \neq 0$	$\frac{1}{6} \times \frac{4}{x} \rightarrow 6(4) = x(1)$ $x = 24$
2. $\frac{2(5)}{2(3x)} + \frac{(1)}{(6)} \frac{x}{x} = \frac{10+x}{6x}$ $\text{LCD} = 6x$ $x \neq 0$	$\frac{5}{3x} \times \frac{1}{6}$ $30 = 3x$ $x = 10$
3. $\frac{x(1)}{x(6)} + \frac{(1)(3)}{(2)x} \frac{(1)}{x} \frac{6}{6}$ $\text{LCD} = 6x$ $= \frac{x}{6x} + \frac{3x}{6x} - \frac{6}{6x} = \frac{4x-6}{6x}$ $= \frac{2(2x-3)}{3(2x)} = \frac{2x-3}{3x}$ $x \neq 0$	$\text{LCD} = 6x$ $\frac{1}{6} + \frac{1}{2} = \frac{1}{x}$ $\frac{(1)(x)}{(6)(1)} + \frac{(1)(x)}{(2)(1)} = \frac{(1)(x)}{(x)(1)}$ $x + 3x = 6$ $4x = 6$ $x = \frac{6}{4} = \frac{3}{2}$

A Combine	B Solve EQ
4. $\frac{3}{x} - \frac{9}{x} - \frac{(2)}{(1)} \frac{x}{x}$ $\text{LCD} = x$ $= \frac{3}{x} - \frac{9}{x} - \frac{2x}{x} = \frac{-6-2x}{x}$ $= \frac{-2(3+x)}{x}$ $x \neq 0$	$\frac{3}{x} - \frac{9}{x} = -2$ $\frac{-6}{x} = \frac{-2}{1}$ $\frac{-6}{-2} = \frac{-2x}{-2}$ $x = 3$

S. A $(C.D = 12x(x+1))$

$$\frac{12x \left(\frac{3}{12x(x+1)} \right) - \left(\frac{2}{x} \right) \frac{12(x+1)}{12(x+1)} + \left(\frac{1}{2} \right) \frac{x(x+1)}{x(x+1)}}$$

$$= \frac{36x}{12x(x+1)} - \frac{(24x+24)}{12x(x+1)} + \frac{x^2+x}{12x(x+1)}$$

$$= \frac{36x - 24x - 24 + x^2 + x}{12x(x+1)}$$

$$= \frac{x^2 + 13x - 24}{12x(x+1)}$$

$P = 24$
 $S = 13$
 $x \neq 0, -1$

B