Name: KEY

Review 9.5-9.6

1) Find the LCD of the pair of expressions.

$\frac{9}{8x^3y^2}, \frac{9}{8x^4y^4}$ $8x^4y^4$

2) Add or subtract.

$\frac{-x+6}{-12x} + \frac{-x+6}{-12x} = \frac{-x+6-x+6}{-12x} = \frac{-2x}{-12x} = \frac{1}{6}$

3) Add or subtract.

$\frac{3}{(x+5)} + \frac{2}{(x-4)}$

$\frac{3(x-4)}{(x+5)(x-4)} + \frac{2(x+5)}{(x+5)(x-4)} = \frac{3x-12+2x+10}{(x+5)(x-4)} = \frac{5x-2}{(x+5)(x-4)}$

4) Add or subtract. Simplify if possible.

$\frac{4}{(w-8)} + \frac{3}{w^2-64}$

$(w+8)(w-8)$

$\frac{4(w+8)}{(w+8)(w-8)} + \frac{3}{(w+8)(w-8)} = \frac{4w+32+3}{(w+8)(w-8)} = \frac{4w+35}{(w+8)(w-8)}$

Simplify the complex fraction.

5) $\frac{x+\frac{4x}{y}}{\frac{7}{3x}} = \frac{\frac{xy+4x}{y}}{\frac{7}{3x}} = \frac{x(y+4)}{y} \cdot \frac{3x}{7} = \frac{3x(xy+4x)}{7y} = \frac{3x^2(y+4)}{7y}$

6) $\dfrac{\dfrac{4}{(x+3)}}{\dfrac{1}{x}+\dfrac{3}{1}} = \dfrac{\dfrac{4}{(x+3)}}{\dfrac{(1+3x)}{x}} = \dfrac{4}{(x+3)} \cdot \dfrac{x}{(1+3x)} = \dfrac{4x}{(x+3)(1+3x)}$

7) Simplify the complex fraction.

$$\frac{\frac{4}{2y}-\frac{2}{4y}}{\frac{4}{3y}+\frac{3}{3y}} = \frac{\frac{8-2}{4y}}{\frac{7}{3y}} = \frac{\frac{6}{4y}}{\frac{7}{3y}} = \frac{6}{4y} \cdot \frac{3y}{7} = \frac{9}{14}$$

8) Solve the equation.

$$\frac{-2}{(x+4)} = \frac{4}{(x-5)}$$

$-2(x-5) = 4(x+4)$

$-2x+10 = 4x+16$

$+2x \quad +2x$

$10 = 6x+16$

$-16 \quad -16$

$-6 = 6x$

$\frac{-6}{6} = \frac{6x}{6}$

$x = -1$

9) Solve the equation.

$$\frac{(c-3)}{(c+9)} = \frac{(c-5)}{(c+6)}$$

$(c-3)(c+6) = (c+9)(c-5)$

$c^2+3c-18 = c^2+4c-45$

$-c^2 \quad -c^2$

$3c-18 = 4c-45$

$-3c \quad -3c$

$-18 = c-45$

$+45 \quad +45$

$27 = c$

10) Solve the equation.

$\frac{4}{y} + \frac{1}{2y} = \frac{-4}{1}$ (LCD)

$\frac{8}{2y} + \frac{1}{2y} = \frac{-8y}{2y}$

$8 + 1 = -8y$

$\frac{9}{-8} = \frac{-8y}{-8}$

$y = -\frac{9}{8}$ or $-1\frac{1}{8}$

Solve the equation. Check the solution.

11) $\frac{6}{x^2-9} - \frac{1}{(x-3)} = \frac{1}{1}$

$(x+3)(x-3)$

$x^2 - 9$

$\frac{6}{(x+3)(x-3)} + \frac{-(x+3)}{(x+3)(x-3)} = \frac{(x+3)(x-3)}{(x+3)(x-3)}$

$6 - 1x - 3 = x^2 - 9$

$-1x + 3 = x^2 - 9$

$+1x - 3 \quad +1x - 3$

$0 = x^2 + 1x - 12$

$0 = x^2 + 1x - 12$

$0 = (x+4)(x-3)$

$x + 4 = 0$ $\quad x - 3 = 0$

$x = -4$ $\quad x = 3$

12) Solve the equation.

$\frac{a}{a^2-36} + \frac{2}{(a-6)} = \frac{1}{(a+6)}$

$(a+6)(a-6)$

$\frac{a}{(a+6)(a-6)} + \frac{2(a+6)}{(a+6)(a-6)} = \frac{a-6}{(a+6)(a-6)}$

$1a + 2a + 12 = 1a - 6$

$3a + 12 = 1a - 6$

$-1a \quad -1a$

$2a + 12 = -6$

$-12 \quad -12$

$2a = -18$

$a = -9$