# WARM UP

## Add or Subtract. Simplify where possible.

1) $\frac{2x+3}{5x} - \frac{7x+8}{5x}$

$\frac{2x+3-7x-8}{5x}$

$\frac{-5x-5}{5x}$

$\frac{5(-x-1)}{5x}$

$\frac{-x-1}{x}$

2) $\frac{3}{x^2-49} + \frac{2}{x^2-9x+14}$

$\frac{3}{(x+7)(x-7)} + \frac{2}{(x-2)(x-7)}$

$\frac{3(x-2)+2(x+7)}{(x-7)(x+7)(x-2)}$

$\frac{3x-6+2x+14}{(x-7)(x+7)(x-2)}$

$\frac{5x+8}{(x-7)(x+7)(x-2)}$

$x \neq \pm 7, 2$

3) $\frac{2x+6}{x^2-x-20} \cdot \frac{x-5}{2x^2+3x-9}$

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

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

$x = 5, -4, -3, \frac{3}{2}$

CHECK HW - 9.5 Part 1 - p. 517

**10.** $\frac{1}{x}$

**11.** $\frac{2(d-2)}{2d+1}$

**12.** $\frac{xy+8y+4}{2xy^2}$

**13.** $\frac{7x^2+20x-18}{(x-3)(x+3)(x+4)}$

**14.** $\frac{-x+6}{(x-3)(x+3)}$

**15.** $\frac{5x^2+14x-12}{(x-3)(x+2)^2}$

**16.** $-\frac{3}{x}$

**17.** $\frac{-3(2y+1)}{2y-1}$

**18.** $\frac{y-6}{2(y+2)}$

**19.** $\frac{x^2-24}{3x(x+3)}$

**20.** $\frac{-5(y+8)}{(y-5)(y+5)}$

**21.** $\frac{-2x(x+3)}{(x-2)(x-1)(x+1)}$

**31.** $\frac{3x-8}{4x^2}$

**32.** $\frac{x^2+4x-3}{(x+1)(x-1)}$

**33.** $\frac{2x^3-x^2+1}{x^2(x+1)(x-1)}$

**34.** $\frac{7x-17}{(x-3)(x+3)}$

**35.** $\frac{x^2+9x-1}{(x-1)(2x+1)}$

**36.** $\frac{4x-1}{2x(2x-1)}$

**37.** $\frac{5x^2+6x+12}{(x-3)(x+2)^2}$

**38.** $\frac{x(3x^2+x-1)}{x^2-2}$

**39.** $\frac{4y^3+12y^2-y-2}{y(y+3)}$

**40.** $\frac{3(4y-21)}{y(y-7)}$

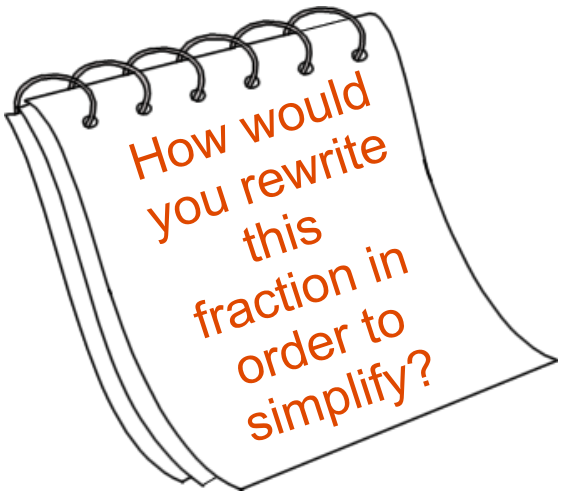
# QUIZ

Turn off your cell phone and place it in the wall hanger.

1 person per table

Pencil only

# 9.5 Adding and Subtracting Rational Expressions (Day 2 - Complex Fractions)




$$\frac{\frac{1}{a}}{\frac{3}{c}}$$

# Simplifying Complex Fractions

$$\frac{3}{1-\frac{1}{2x}}$$

Write as one fraction with a common denominator.

$\frac{3}{1}$ $\quad \frac{2x \cdot 1}{2x \cdot 1} - \frac{1}{2x}$

$$\frac{2x}{2x} - \frac{1}{2x} = \frac{2x-1}{2x}$$

$$\frac{\frac{3}{1}}{\frac{2x-1}{2x}} = \frac{3}{1} \cdot \frac{2x}{2x-1} = \boxed{\frac{6x}{(2x-1)}}$$

# Simplifying Complex Fractions

Write as one fraction with a common denominator.

$$\frac{\frac{3}{x}+y}{5}$$

$$\frac{3}{x}+\frac{y}{1}\cdot\frac{x}{x}=\frac{3}{x}+\frac{yx}{x}=\frac{3+yx}{x}$$

$$\frac{5}{1}$$

$$\frac{\frac{3+yx}{x}}{\frac{5}{1}}=\frac{3+yx}{x}\cdot\frac{1}{5}=\frac{3+yx}{5x}$$

# Simplifying Complex Fractions

$$2 \cdot \frac{\frac{1}{2} - \frac{x+5}{4}}{\frac{x^2}{2} - \frac{5}{2}} = \frac{\frac{2}{4} - \frac{x+5}{4}}{\frac{x^2-5}{2}} = \frac{2-x-5}{4} = \frac{-x-3}{4}$$

$$\frac{-x-3}{4} \cdot \frac{2}{x^2-5} = \frac{-x-3}{2(x^2-5)}$$

# Simplifying Complex Fractions

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

$\cdot(2y+1)$

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

$(2y-1)$

$(2y-1)\cdot$

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

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

pg 518 #23-29 odd, 45, 49

WB pg 71 #32-39