

**Are there any Homework Questions you would like to see on the board?**

Last day's work: pp. 128-129 #(6 – 10)ace

7e

8a

Unit Review work: pp. 132-133 #1, 4ac, 6cfg, 7, 8, 9ab, 10bde, 12ac, 13bc, 14cd, 15ce

p. 128

p. 134 #1 – 3, 5 – 8 [4, 9]

Simplify. State any restrictions on the variables.

6e

$$\text{e)} \quad \frac{7x}{x+4} + \frac{3x}{x-6}$$

$$= \frac{7x(x-6)}{(x+4)(x-6)} + \frac{3x(x+4)}{(x+4)(x-6)}$$

$$= \frac{7x^2 - 42x + 3x^2 + 12x}{(x+4)(x-6)}$$

$$= \frac{10x^2 - 30x}{(x+4)(x-6)}$$

$$= \frac{10x(x-3)}{(x+4)(x-6)}$$

Restrictions

$$x \neq -4, 6$$

p. 129 7. Simplify. State any restrictions on the variables.

$$\text{e)} \quad \frac{x-1}{x^2-9} + \frac{x+7}{x^2-5x+6}$$

$$= \frac{x-1}{(x-3)(x+3)} + \frac{x+7}{(x-3)(x-2)}$$

$$= \frac{(x-1)(x-2) + (x+7)(x+3)}{(x-3)(x+3)(x-2)}$$

$$= \frac{x^2 - 3x + 2 + x^2 + 10x + 21}{(x-3)(x+3)(x-2)}$$

$$= \frac{2x^2 + 7x + 23}{(x-3)(x+3)(x-2)}$$

Rest:  $x \neq -3, 3, 2$

p. 129 8. Simplify. State any restrictions on the variables.

$$\text{a) } \frac{3}{4x^2 + 7x + 3} - \frac{5}{16x^2 + 24x + 9}$$

$$\begin{aligned}
 &= \frac{\cancel{3}}{(4x+3)(x+1)} - \frac{\cancel{5}}{(4x+3)(4x+3)} \\
 &= \frac{\cancel{3}(4x+3) - \cancel{5}(x+1)}{(4x+3)(x+1)(4x+3)} \\
 &= \frac{12x+9-5x-5}{(4x+3)^2(x+1)} \\
 &= \frac{7x+4}{(4x+3)^2(x+1)} \quad \text{Rest: } x \neq -1, -\frac{3}{4}
 \end{aligned}$$

9. Simplify. State any restrictions on the variables. Remember the order of operations.

$$\begin{aligned}
 \text{a) } & \frac{\cancel{2x^2}}{15y^2} \times \frac{\cancel{5y}}{10x} - \frac{2y}{3x} \\
 &= \frac{\cancel{3x^2}}{5y} - \frac{2y}{3x} \rightarrow (CD = 15xy) \\
 &= \frac{3x^2(3x)}{15xy} - \frac{2y(5y)}{15xy} \\
 &= \frac{9x^3 - 10y^2}{15xy} \quad \text{Rest: } x \neq 0, y \neq 0
 \end{aligned}$$

p. 132

$$8d) \quad | 5x^2 - 53x + 42 \rightarrow 630$$

$$= (3x-7)(5x-6)$$

$$\begin{array}{r} 15 \\ \overline{)15} \\ 1 \quad 15 \\ 3 \quad 5 \end{array}$$

$$\begin{array}{r} 42 \\ \overline{)42} \\ 1 \quad 42 \\ 2 \quad 21 \\ 3 \quad 14 \end{array}$$

$$\begin{array}{r} (3x-7) \\ (5x-6) \end{array}$$

$$= -18 - 35$$

$$= -53$$

$$\begin{array}{r} 3 \quad 14 \\ 5 \cancel{x} \quad \cancel{-3} \\ \hline -3 \end{array}$$

$$= -9 - 70$$

$$= -79$$

$$\begin{array}{r} x \\ 8 \\ 6 \quad 7 \end{array}$$

$$\begin{array}{r} 3 \quad -3 \\ 5 \quad -14 \end{array}$$

$$(3x-3)(5x-14)$$

$$= 3(x-1)(5x-14)$$

$$15x^2 - 53x + 42$$

$$= \underbrace{15x^2 - 18x}_{\text{ }} - \underbrace{35x + 42}_{\text{ }}$$

$$= 3x(5x-6) - 7(5x-6)$$

$$= (5x-6)(3x-7)$$

p. 132

$$8f) (m-n)^2 - (2m+3n)^2$$

$w = m-n$     $\ell = 2m+3n$

$$w^2 - \ell^2$$

$$= (w-\ell)(w+\ell)$$

$$= (m-n - (2m+3n))(m-n + (2m+3n))$$

$$= (m-n - \underline{2m} - \underline{3n})(m-n + \underline{2m} + \underline{3n})$$

$$= (-m-4n)(3m+2n)$$

$$= -(m+4n)(3m+2n)$$