

Section 2.3 p. 124 #13 – 15, 23, 24, 28, 29, 31 plus the Rational Expression Review below.

Perform each of the given operations. Leave your answer in simplified form.

$$1) \quad \frac{3}{2(x-9)} + \frac{9}{2(x-9)}$$

$$2) \quad \frac{5x+1}{x^2-64} - \frac{4x-7}{x^2-64}$$

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

$$4) \quad \frac{6}{5x^3y} - \frac{1}{2x^2y^3}$$

$$5) \quad \frac{x-1}{x-2} - \frac{x^2+4x-4}{x^2+4x-12}$$

$$6) \quad \frac{x-4}{x^2+5x+6} + \frac{x-1}{x^2-4}$$

$$7) \quad \frac{x+1}{x^2+6x+9} + \frac{x-4}{x^2-9}$$

$$8) \quad \frac{5x}{1-2x} - \frac{2x}{2x+1} + \frac{3}{4x^2-1}$$

Factor each of the following. Show your process and check your work.

9)  $5n^3 - 10n^2 + 3n - 6$

10)  $12xy - 28x - 15y + 35$

11)  $6x^2 - 54$

12)  $14x^2 - 17x + 5$

Simplify each of the following complex fractions:

13) 
$$\frac{\frac{4}{x-3} + \frac{2}{3}}{\frac{5}{x-3}}$$

14) 
$$\frac{\frac{u^2}{2v}}{\frac{v^2}{u^2} + \frac{v}{2}}$$

15) 
$$\frac{\frac{x^2}{9} - \frac{25}{4}}{\frac{4}{x} - \frac{x}{5}}$$