

Name _____ Block _____

Ch. 9 Review 2

Simplify

$$1) \frac{x^2 - 8x - 9}{x^2 - 1}$$

$$2) \frac{x + 3}{x^2 + 5x + 6}$$

$$3) \frac{3x^2 - 12}{5x - 10} \cdot \frac{1}{2x + 4}$$

$$4) \frac{4x^2 y^3}{x^5 y^6} \cdot \frac{xy}{20x^3}$$

$$5) \frac{x^2 - 3x + 2}{25x} \div \frac{x - 1}{5x^2}$$

$$6) \frac{12x^2 y}{5y^2} \div \frac{3x^2}{2xy}$$

$$7) (x^2 + x - 30) \div \frac{x^2 - 2x - 15}{x^2 + 7x + 12} \cdot \frac{x - 5}{x + 6}$$

Add or Subtract

$$8) \frac{x}{x^2+x-2} + \frac{1}{x+2}$$

$$9) \frac{3}{x+5} + \frac{4}{x+1}$$

$$10) \frac{4x}{x^2-4} - \frac{3}{x+2}$$

$$11) 4 - \frac{5}{x+3}$$

$$12) \frac{4}{x} - \frac{2}{x^2} + \frac{4}{x+3}$$

$$13) \frac{2x}{x+2} - \frac{8}{x^2+2x} + \frac{3}{x}$$

Simplify the complex fraction

$$14) \frac{\frac{6}{x-1} - 3}{\frac{3}{x}}$$

$$15) \frac{\frac{1}{x} + \frac{1}{2x+1}}{\frac{4x}{2x+1}}$$

Solve the equation. State any restriction on x

$$16) \frac{4}{x} - \frac{1}{x+2} = \frac{2}{x}$$

$$17) \frac{2x}{x+3} + 5 = \frac{3}{x+3}$$

$$18) \frac{x+1}{x+3} = 2$$

$$19) \frac{x}{x^2-8} = \frac{2}{x}$$

$$20) \frac{3x}{x-2} + \frac{1}{x+2} = \frac{4}{x^2-4}$$

$$21) \frac{3x}{x+1} = \frac{1}{x^2+2} + 2$$

x and y vary inversely. Write the equation

22) $x = 6, y = 9$

23) $x = 72, y = \frac{1}{18}$

24) $x = 3, y = 4$

25) $x = 10, y = \frac{1}{2}$

z varies jointly with x and y. Write down the equation

26) $x = 2, y = 3, z = 4$

27) $x = 8, y = -54, z = 144$

28) $x = 1, y = \frac{1}{8}, z = 4$

29) $x = \frac{1}{2}, y = 8, z = 12$