

Unit 5.6 Complex Fractions with Rational Expressions Practice

Period _____

Simplify each expression.

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

$$\frac{4x}{27}$$

2)
$$\frac{\frac{1}{u}}{\frac{u}{4}}$$

$$\frac{4}{u^2}$$

3)
$$\frac{\frac{5}{y^2}}{\frac{5}{yx}}$$

$$\frac{x}{y}$$

4)
$$\frac{\frac{y^2}{4}}{\frac{y}{x}}$$

$$\frac{yx}{4}$$

5)
$$\frac{\frac{u^2}{1}}{\frac{1}{4} + \frac{u^2}{4}}$$

$$\frac{4u^2}{1+u^2}$$

6)
$$\frac{\frac{3}{x^2}}{\frac{9}{x} + \frac{3}{x}}$$

$$\frac{1}{4x}$$

7)
$$\frac{\frac{u^2}{3}}{\frac{u}{5} + \frac{9}{5}}$$

$$\frac{5u^2}{3u+27}$$

8)
$$\frac{\frac{5b}{a^2}}{\frac{25}{a^2} + \frac{a}{5}}$$

$$\frac{25b}{125+a^3}$$

9)
$$\frac{\frac{a}{2} - \frac{b^2}{a^2}}{\frac{b}{a^2}}$$

$$\frac{a^3 - 2b^2}{2b}$$

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

$$\frac{4+yx}{4y}$$

$$11) \frac{\frac{x^2}{3} + \frac{5}{4}}{\frac{3}{16} - \frac{25}{9}}$$

$$\frac{-48x^2 - 180}{373}$$

$$12) \frac{\frac{u^2}{16} + \frac{4}{3}}{\frac{3}{u} - \frac{1}{2}}$$

$$\frac{3u^3 + 64u}{144 - 24u}$$

$$13) \frac{\frac{5}{3} - \frac{4}{a}}{\frac{25}{4} + \frac{1}{3}}$$

$$\frac{20a - 48}{79a}$$

$$14) \frac{\frac{v}{3} - \frac{5}{u}}{\frac{u^2}{v^2} - \frac{v}{u}}$$

$$\frac{v^3u - 15v^2}{3u^3 - 3v^3}$$

$$15) \frac{\frac{x}{5} + \frac{1}{y}}{\frac{y}{x^2} - \frac{1}{y}}$$

$$\frac{x^3y + 5x^2}{5y^2 - 5x^2}$$

$$16) \frac{\frac{y^2}{2x} - \frac{1}{2}}{\frac{2y}{x^2} - \frac{2}{x}}$$

$$\frac{xy^2 - x^2}{4y - 4x}$$

$$17) \frac{\frac{y-2}{x+5} + \frac{9}{x+5}}{\frac{y-2}{x+5}}$$

$$\frac{y+7}{y-2}$$

$$18) \frac{\frac{x+4}{y-1} + \frac{x+4}{3}}{\frac{x+4}{x+4} + \frac{x+4}{3}}$$

$$\frac{3x^2 + 24x + 48}{3y + 13 + x^2 + 8x}$$

$$19) \frac{\frac{y-5}{5y-25} + \frac{y-5}{5}}{\frac{x-3}{x-3} + \frac{y-5}{5}}$$

$$\frac{5x - 15}{22 + x}$$

$$20) \frac{\frac{y+3}{4} - \frac{4}{x+2}}{\frac{4}{x+2} + \frac{y+3}{x+2}}$$

$$\frac{yx + 2y + 3x - 10}{28 + 4y}$$

$$21) \frac{\frac{b+5}{a+1} - \frac{25}{b+5}}{\frac{25}{a+1} - \frac{4}{a+1}}$$

$$\frac{b^2 + 10b - 25a}{21b + 105}$$

$$22) \frac{\frac{x+1}{25} - \frac{x+1}{y+3}}{\frac{x+1}{5y+15} + \frac{x+1}{y+3}}$$

$$\frac{y-22}{30}$$