

**6.5 Complex Fractions**

Basic Concepts Simplifying Complex Fractions
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**Basic Concepts***Exercises 1-6: Simplify.*

1. 
$$\frac{\frac{1}{2}}{\frac{3}{4}}$$

1. \_\_\_\_\_

2. 
$$\frac{\frac{3}{5}}{\frac{4}{9}}$$

2. \_\_\_\_\_

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

3. \_\_\_\_\_

4. 
$$\frac{\frac{x^2}{4y}}{\frac{2x^2}{3y^2}}$$

4. \_\_\_\_\_

$$5. \frac{2 + \frac{1}{3}}{2 - \frac{1}{2}}$$

5. \_\_\_\_\_

$$6. \frac{\frac{1}{2} + \frac{2}{3}}{\frac{1}{2} - \frac{3}{3}}$$

6. \_\_\_\_\_

### Simplifying Complex Fractions

*Exercises 7-20: Simplify.*

$$7. \frac{\frac{2a}{b-3}}{\frac{a}{b-3}}$$

7. \_\_\_\_\_

$$8. \frac{\frac{2y-3}{y}}{\frac{y+2}{y}}$$

8. \_\_\_\_\_

$$9. \frac{\frac{7}{x^2-9}}{\frac{x}{x^2-9}}$$

9. \_\_\_\_\_

$$10. \frac{\frac{3}{x^2 - 25}}{\frac{x}{x + 5}}$$

10. \_\_\_\_\_

$$11. \frac{\frac{3 - x}{1} - \frac{1}{3}}{x}$$

11. \_\_\_\_\_

$$12. \frac{\frac{1}{x + 2}}{\frac{1}{x} - \frac{2}{x + 2}}$$

12. \_\_\_\_\_

$$13. \frac{\frac{3}{x} + \frac{1}{x^2}}{\frac{2}{x} - \frac{1}{x^2}}$$

13. \_\_\_\_\_

$$14. \frac{\frac{1}{x - 4} + \frac{2}{x + 4}}{\frac{3}{x + 4} - \frac{1}{x - 4}}$$

14. \_\_\_\_\_

$$15. \frac{\frac{3}{x+3}}{\frac{1}{x+3} - \frac{1}{x}}$$

15. \_\_\_\_\_

$$16. \frac{\frac{1}{a^2b} - \frac{1}{ab^2}}{\frac{1}{a^2b} + \frac{1}{ab^2}}$$

16. \_\_\_\_\_

$$17. \frac{x - \frac{1}{x}}{x + \frac{1}{x}}$$

17. \_\_\_\_\_

$$18. \frac{\frac{2}{z} + \frac{1}{z+2}}{\frac{1}{z+2}}$$

18. \_\_\_\_\_

$$19. \frac{2^{-1} + 3^{-1}}{4^{-1} + 1^{-1}}$$

19. \_\_\_\_\_

$$20. \frac{2x^{-1} + y^{-2}}{1 + (xy)^{-2}}$$

20. \_\_\_\_\_