1.10 Practice Set

1. Describe your method to divide complex fractions using an example.

Simplify each of the following.

2. $2b^{-3}$

3. $(8y)^{-1}$

4. $\dfrac{\frac{16}{2x}}{\frac{8}{6x}}$

5. $\dfrac{4+\frac{8}{9}}{1+\frac{7}{9}}$

6. $\dfrac{\frac{25x^2-y^2}{xy}}{\frac{5}{y}-\frac{1}{x}}$

7. $\dfrac{\frac{x+6}{3}}{\frac{3x-1}{9}}$

8. $\dfrac{\frac{2}{x}+\frac{1}{x^2}}{\frac{4^2}{x}-\frac{1}{x}}$

9. $\dfrac{\frac{1}{x}+\frac{2}{x^2}}{\frac{4}{x^2}-\frac{1}{x}}$

10. $\dfrac{\frac{5}{2-x}+\frac{6}{x-2}}{\frac{2}{x}+\frac{3}{x-2}}$

11. $\dfrac{\frac{3}{x}+7}{\frac{9}{x^2}-49}$

12. $\dfrac{5-\frac{x}{y}}{\frac{x^2}{y^2}-25}$

13. $\dfrac{\frac{x-4}{x^2-25}}{1+\frac{1}{x-5}}$

14. $\dfrac{\frac{8}{x+3}+\frac{12}{x+7}}{\frac{5x+23}{x^2+10x+21}}$

15. $\dfrac{a^{-1}+3}{a^{-1}-3}$

16. $\dfrac{2x^{-1}+(5y)^{-1}}{x^{-2}}$

17. $\dfrac{m}{1-\frac{n}{775}}$

18. $\dfrac{1}{1+(4-x)^{-1}}$

Find the difference quotient $\frac{f(a+h)-f(a)}{h}$ for each of the following functions and simplify.

19. $f(x)=\frac{2}{x}$

20. $g(x)=\frac{x}{x-1}$

Distributed Practice Problems

Perform the indicated operation and/or simplify each of the following.

21. $\dfrac{x}{3x^2-5x-12}-\dfrac{x+8}{4x^2-7x-15}$

22. $\dfrac{x^2-8x-9}{2x^2-162}\div\dfrac{x^2+10x+9}{x^2+18x+81}$

23. $\dfrac{8b+32}{3a+9}\div\dfrac{ab-3b+4a-12}{a^2-6a+9}$

24. $\dfrac{3x^2-27}{4x^2-20x}\div\dfrac{x^3+3x^2}{2x^2-10x}\cdot\dfrac{12x^3+20x^2}{2x^2-6x}$

25. $(4x^5y^{-6})^2(5x^{-7}y^9)^{-1}$