

## Exam 2 (Algebraic Fractions) Review Sheet

Topics:

- Reducing Algebraic Fractions
- Undefined Fractions
- Multiplying and Dividing Algebraic Fractions
- Adding and Subtracting Fractions with Like Denominators
- Adding and Subtracting Fractions with Unlike Denominators
- Solving Fractional Equations

In 1 – 3, find the value of  $x$  that makes each fraction undefined:

1.  $\frac{9}{x}$

2.  $\frac{2x-15}{6x}$

3.  $\frac{3xy}{2x-4}$

In 4 – 9, perform the indicated operation(s) and simplify the result.

4.  $\frac{x^2-4x-5}{x^2-2x-15}$

5.  $\frac{5x^2}{3xy} \cdot \frac{9y^2}{20}$

6.  $\frac{p^3-p}{5p^2} \cdot \frac{15}{p+1}$

7.  $\frac{10ab}{14a^2} \div \frac{25b^3}{7ab^2}$

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

9.  $\frac{3}{4y} + \frac{5}{y} - \frac{1}{2y}$

10. Solve for  $x$ :  $\frac{2x}{3} + \frac{x}{6} = 5$

11. Solve for  $x$ :  $12 - \frac{4x}{3} = \frac{x}{6}$

12. Express  $\frac{x}{10} + \frac{3x}{5}$  as a single fraction in simplest form.

13. What is the quotient of  $\frac{x}{x+4}$  divided by  $\frac{2x}{x^2-16}$ , expressed in simplest form?

14. What is  $\frac{2+x}{5x} - \frac{x-2}{5x}$  expressed in simplest form?

15. Express in simplest form:  $\frac{45a^4b^3 - 90a^3b}{15a^2b}$

16. Which expression represents  $\frac{2x^2-12x}{x-6}$  in simplest form?

(1) 0

(3)  $4x$

(2)  $2x$

(4)  $2x+2$

17. Express in simplest form:  $\frac{x^2+9x+14}{x^2-49} \div \frac{3x+6}{x^2+x-56}$

18. Which of the following fractions CANNOT be reduced?

(1)  $\frac{x^2-36}{x+6}$

(2)  $\frac{x(x-5)+5}{x-5}$

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

(4)  $\frac{2x^2}{4x^2+6}$