Worksheet 1.4.1: Addition and Subtraction of Rational Algebraic Expressions

A. Similar or Dissimilar

Write Similar if the given fractions are similar or Dissimilar if they are dissimilar. One point each.

1. $\dfrac{1}{4}$ and $\dfrac{3}{4}$

2. $\dfrac{1}{6}$ and $\dfrac{1}{5}$

3. $\dfrac{5}{3}$ and $\dfrac{2}{3}$

4. $\dfrac{4}{7}$ and $\dfrac{4}{5}$

5. $\dfrac{6}{5}$ and $\dfrac{1}{5}$

B. Finding the LCD

Find the least common denominator (LCD) of each pair of rational algebraic expressions. Choose the answer from the box. Write the letter only. One point each.

a. $(x+1)(x+2)$	f. $(x+7)(x-8)$
b. $(5x+4)(2x+3)$	g. $3x(x+4)$
c. $(7x-5)(x+4)$	h. $3(3x-2)$
d. $4x(x+1)$	i. $4(x-1)$
e. $3(x+8)(x-1)$	j. $(x-2)(x-2)$

6. $\dfrac{6}{x-1}$ and $\dfrac{5x}{4}$

7. $\dfrac{3}{x+7}$ and $\dfrac{4}{x-8}$

8. $\dfrac{3}{4x^2+4x}$ and $\dfrac{7}{2}$

9. $\dfrac{7}{3}$ and $\dfrac{8}{12x-8}$

10. $\dfrac{2x}{5x+4}$ and $\dfrac{6x}{2x+3}$

11. $\dfrac{2x}{x^2-4x+4}$ and $\dfrac{1}{x-2}$

12. 6 and $\dfrac{x+5}{(7x-5)(x+4)}$

13. $\dfrac{2}{3x^2+12x}$ and $\dfrac{8}{2x}$

14. $\dfrac{5x+5}{5x^2+35x-40}$ and $\dfrac{7x}{3x}$

15. $\dfrac{4}{x+1}$ and $\dfrac{2}{x+2}$

C. Adding and Subtracting Rational Expressions

Perform the indicated operation. Choose the answer from the box. Write the letter only. One point each.

a. $\dfrac{2x+7}{3x-6}$	f. $-\dfrac{1}{2x^2+13x+20}$
b. $\dfrac{2x+6}{(x+1)(x+2)}$	g. $\dfrac{42x^2+137x-125}{(7x-5)(x+4)}$
c. $\dfrac{7x^2+52x-53}{3(x+8)(x-1)}$	h. $\dfrac{7x-4y}{8y}$
d. $-\dfrac{1}{x^3}$	i. $\dfrac{x+2}{(x-2)^2}$
e. $\dfrac{50+12x}{3x(x+4)}$	j. $\dfrac{6+5x}{x^2+3x+2}$

16. $\dfrac{x-y}{8y} + \dfrac{6x-3y}{8y}$

17. $\dfrac{x-3y}{6x^3y} - \dfrac{x+3y}{6x^3y}$

18. $\dfrac{5}{x^2+3x+2} + \dfrac{5x+1}{x^2+3x+2}$

19. $\dfrac{x+2}{2x^2+13x+20} - \dfrac{x+3}{2x^2+13x+20}$

20. $\dfrac{x+6}{3x-6} + \dfrac{x+1}{3x-6}$

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

22. $6 - \dfrac{x+5}{(7x-5)(x+4)}$

23. $\dfrac{2}{3x^2+12x} + \dfrac{8}{2x}$

24. $\dfrac{5x+5}{5x^2+35x-40} + \dfrac{7x}{3x}$

25. $\dfrac{4}{x+1} - \dfrac{2}{x+2}$