9-2 Practice

Adding and Subtracting Rational Expressions

Find the LCM of each set of polynomials.

1. x^2y, xy^3

2. a^2b^3c, abc^4

3. $x + 1, x + 3$

4. $g - 1, g^2 + 3g - 4$

5. $2r + 2, r^2 + r, r + 1$

6. $3, 4w + 2, 4w^2 - 1$

7. $x^2 + 2x - 8, x + 4$

8. $x^2 - x - 6, x^2 + 6x + 8$

9. $d^2 + 6d + 9, 2(d^2 - 9)$

Simplify each expression.

10. $\dfrac{5}{6ab} - \dfrac{7}{8a}$

11. $\dfrac{5}{12x^4y} - \dfrac{1}{5x^2y^3}$

12. $\dfrac{1}{6c^2d} + \dfrac{3}{4cd^3}$

13. $\dfrac{4m}{3mn} + 2$

14. $2x - 5 - \dfrac{x - 8}{x + 4}$

15. $\dfrac{4}{a - 3} + \dfrac{9}{a - 5}$

16. $\dfrac{16}{x^2 - 16} + \dfrac{2}{x + 4}$

17. $\dfrac{2 - 5m}{m - 9} + \dfrac{4m - 5}{9 - m}$

18. $\dfrac{y - 5}{y^2 - 3y - 10} + \dfrac{y}{y^2 + y - 2}$

19. $\dfrac{5}{2x - 12} - \dfrac{20}{x^2 - 4x - 12}$

20. $\dfrac{2p - 3}{p^2 - 5p + 6} - \dfrac{5}{p^2 - 9}$

21. $\dfrac{1}{5n} - \dfrac{3}{4} + \dfrac{7}{10n}$

22. $\dfrac{2a}{a - 3} - \dfrac{2a}{a + 3} + \dfrac{36}{a^2 - 9}$

23. $\dfrac{\dfrac{2}{x - y} + \dfrac{1}{x + y}}{\dfrac{1}{x - y}}$

24. $\dfrac{\dfrac{r + 6}{r} - \dfrac{1}{r + 2}}{\dfrac{r^2 + 4r + 3}{r^2 + 2r}}$

25. GEOMETRY The expressions $\dfrac{5x}{2}, \dfrac{20}{x + 4}$, and $\dfrac{10}{x - 4}$ represent the lengths of the sides of a triangle. Write a simplified expression for the perimeter of the triangle.

26. KAYAKING Mai is kayaking on a river that has a current of 2 miles per hour. If r represents her rate in calm water, then $r + 2$ represents her rate with the current, and $r - 2$ represents her rate against the current. Mai kayaks 2 miles downstream and then back to her starting point. Use the formula for time, $t = \dfrac{d}{r}$, where d is the distance, to write a simplified expression for the total time it takes Mai to complete the trip.