Unit 2 Test Review

Factor the following polynomials. Multiply to check your answers.

1. $x^2 - 81$

2. $x^3 + 125$

3. $x^2 + 16x + 60$

4. $10x^2 - 11x - 6$

5. $x^2 - 14x + 49$

6. $64x^3 - 27y^3$

7. $25x^2 - 15x$

8. $108y^3 - 32$

9. $64x^2 - 25y^2$

10. $5x^2 - 52x + 20$

11. $9y - 18$

12. $20x^2 + 22x - 12$

Write the **common denominator** in factored form.

13. $\dfrac{4}{x-1} - \dfrac{10}{x+2}$

14. $\dfrac{5x}{2x+6} + \dfrac{3}{x+3}$

15. $\dfrac{2}{4x^2+12x} + \dfrac{5x}{x^2+x-6}$

Simplify the following expressions. **Do the operation that is asked.** Do NOT multiply answers, leave them in factored form.

16. $\dfrac{3x^2+13x-10}{3x-2}$

17. $\dfrac{8x}{x-2} - \dfrac{16}{x-2}$

18. $\dfrac{x^2+5x}{x^2-49} + \dfrac{5x+21}{x^2-49}$

19. $\dfrac{5}{x-2} - \dfrac{4}{x-3}$

20. $\dfrac{x^2+3x-10}{4x^2-9x+2} \cdot \dfrac{16x-4}{x^2+5x}$

21. $\dfrac{x+2}{x^2+6x+8}$

22. $\dfrac{x^2+8x-20}{x^2+6x-40} \div \dfrac{x^2-x}{x-1}$

23. $\dfrac{12x}{4x+8} \cdot \dfrac{x^2+5x+6}{x^2+3x}$

24. $\dfrac{x^2+6x+9}{x+3} \div \dfrac{2x+6}{x^2-9}$

25. $\dfrac{10}{4x-12} + \dfrac{4}{2x-6}$

26. $\dfrac{x+1}{x^2+5x+4} + \dfrac{2}{x^2-16}$

27. $\dfrac{12x-18}{x^2-5x-24} \div \dfrac{4x^2-9}{2x^2-13x-24}$

28. $\dfrac{x^3-64}{x^3+64} \div \dfrac{x^2-16}{x^2-4x+16}$