Precalculus
Unit B.2 Homework:
Adding and Subtracting Rational Expressions

Name:_____
Date:_____Period:_____

1. Explain ***how*** to add rational expressions with unlike denominators.

Perform the indicated operation and then simplify.

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

3. $\frac{5x}{x+3}+\frac{15}{x+3}$

4. What is the Least Common Multiple of the polynomials $3x^2-9x$ and $6x^2$?

A. $3x(x-3)$ B. $6x^2$ C. $6x(x-3)$ D. $6x^2(x-3)$

Perform the indicated operation and then simplify.

5. $\frac{12}{5x}+\frac{7}{6x}$

6. $\frac{8}{3x^2}-\frac{5}{9x}$

7. $\frac{3}{x+4}-\frac{1}{x+6}$

8. $\frac{-15x}{x^2-8x+16}+\frac{12}{x-4}$

9. Which expression is equivalent to $\frac{2x}{x+4}-\frac{x^2+4}{x^2-16}$?

A. $\frac{1}{x+4}$ B. $\frac{(x+2)(x-2)}{(x+4)(x-4)}$ C. $\frac{x^2-8x-4}{(x+4)(x-4)}$ D. $\frac{3x^2-8x+4}{(x+4)(x-4)}$

Perform the indicated operation and then simplify.

10. $\frac{x}{x^2-9}+\frac{x+1}{x^2+6x+9}$

11. $\frac{x+2}{x-4}+\frac{2}{x}-\frac{5x}{3x-1}$

12. $\frac{x+3}{x^2-2x-8}-\frac{x-5}{x^2-12x+32}$

13. $\frac{x+3}{x^2-25}-\frac{x-1}{x-5}+\frac{3}{x+3}$

14. $\frac{2x}{2x^2-8x}+\frac{8}{3x}$

15. $\frac{1}{x+1}-\frac{2}{(x+1)^2}+\frac{3}{x^2-1}$

Solve.

16. $4(x-2)^2=144$

17. $6x^2-25=x^2$

18. $3(x+5)^2-10=182$

19. $3x^2+x=14$

19. $4(x-3)^2-10=90$

20. $5x^2+x=25+x$

Factor:

20. $3x^3 + 4x^2 + 9x + 12$

21. $15x^3 - 40x^2 + 6x - 16$

22. $7k^3 + 28k^2 - 4k - 16$

23. $3x^3 - 12x^2 + 2x - 8$

24. $x^6 + 4x^4 - 9x^2 - 36$

25. $x^6 - 2x^4 - 24x^2$