If you got an F or a D on the midterm exam, you can work on this and hand it in to get some extra credit. Make sure you understand these questions yourself - most will be on the final exam as well.

   Do any working out in the space provided. You must show your work and explain your answers to get full credit.

Q1. Let $g(x) = -x^2 + 5x + 6$. For this function find

(a) $g(0)$

(b) $g(-3)$

(c) $g(4w)$

Q2. Factor completely: $12ab + 20ax - 3by - 5xy$

Q3. Factor completely: $4x^2y - 16y^3$

Q4. Factor completely: $4x^3 + 11x^2 - 3x$

Q5. Solve: $x^2 + 4x = 21$

Q6. Simplify: $\dfrac{x^2 - 4x}{8 - 2x}$

ANS: $-\dfrac{x}{2}$

Q7. Give the x values where this rational expression is undefined: $\dfrac{x^2 - 1}{x^2 + x - 90}$

ANS: $x = 9, -10$

Q8. Perform the indicated operation and simplify: $\dfrac{x + 5}{x^2 + x - 20} \cdot \dfrac{x - 4}{x + 1}$

ANS: $\dfrac{1}{x + 1}$

Q9. Perform the indicated operation and simplify: $\dfrac{6x - 18}{x + 1} \div (6x + 6)$

ANS: $\dfrac{x - 3}{(x + 1)^2}$

Q10. Perform the indicated operation and simplify: $\dfrac{6x^2 + 5}{2x^2 + x - 6} - \dfrac{3x}{x + 2}$

ANS: $\dfrac{9x + 5}{(2x - 3)(x + 2)}$

Q11. Simplify: $\dfrac{\dfrac{8x+26}{x^2-9}}{\dfrac{1}{x+3}+4}$

ANS: $\dfrac{2}{x-3}$

Q12. Solve: $\dfrac{3}{x+5}+\dfrac{7}{x-5}=\dfrac{40}{x^2-25}$

ANS: $x=2$