# Mixed Factoring Problems

**Name:**_____

**1.** Factor out any common factors, then state the type of factoring problem remaining. Answer should be one of: "grouping", "easy trinomial", "messy trinomial", "perfect square", "difference of squares", "difference of cubes", "sum of cubes"

**(A)** $9x^2 + 60x + 100$

**(B)** $20x^2 + 19x + 3$

**(C)** $5x^2 + 39x + 28$

**(D)** $6x^2 + 30x - 84$

**(E)** $x^2 + 12x + 27$

**(F)** $x^2 + 7x - 30$

**(G)** $9x^2y + 30 + 10xy + 27x$

**(H)** $x^3 - 4x^2 - 2x + 8$

**(I)** $x^2y + 9y + 3x^2 + 27$

**(J)** $16x^9 + 20x^7 + 4x^5$

**(K)** $x^6 - 1$

**(L)** $3x^3 - 375$

**(M)** $3x^3 + 375$

**(N)** $2x^2 + 8x - 120$

**(O)** $4x^3 - 24x^2 + 36x$

**(P)** $30x^2y - 55xy + 15y$

**(Q)** $10x^3 + 13x^2 + 4x$

**(R)** $24x^2 + 44x + 12$

# Math 024: Factoring Fever!

**Name:**_____

**1.** Find the greatest common factor of the following sets of terms.

**(A)** $\{27x^2,\ 9x^3,\ 12x^4\}$

**(B)** $\{6x^5y,\ 9x^3y^2,\ 15x^2y^3\}$

**(C)** $\{36t^4,\ 18t^5,\ 81t^3\}$

**2.** Completely factor the following.

**(A)** $18x^3 + 16x$

**(B)** $10x^2 - 30x - 180$

**(C)** $5x^2 + 39x + 28$

**(D)** $5x^2 - 3x - 2$

**(E)** $9x^2 + 24x + 16$

**(F)** $x^2 + 3x - 18$

**(G)** $x^2 + x - 12$

**(H)** $3x^4 + 24x$

**(I)** $9x^2 - 4$

**(J)** $x^2 - 36$

**(K)** $2x^2 - 9x - 5$

**(L)** $11x^2 - 41x - 12$