MPM 2DO **Common Factoring** Date: _____

A.

$$a(b + c) = ab + ac$$

B. Expand each of the following.

1. $2(a - 3) + 3(a - 5)$

=

2. $x(4 - 3x)$

=

3. $5y^2(2y^3 - 3y^4)$

=

4. $x^2y(xy^2 - xy)$

=

C. Determine the **G**reatest **C**ommon **F**actor (GCF) for each of the following.

1. $2x^2, 8x, 32x^3$

2. $a^3b^2, 2a^3b, 3a^2b^4$

3. $5xy^2z, 10xyz^2, 15x^2yz$

D. Factor each expression as the product of a monomial and a polynomial.

1. $4x - 12$

=

2. $5a - 10a^2$

=

3. $ab^2 - a^2b^3$

=

4. $4x^2 + 12x - 40$

=

5. $2b^4 + 4b^3 + 8b^2$

=

6. $x^2yz - xy^2z + xyz^2$

=

DOUBLE CROSS

1. What do you get when you cross a chicken with a centipede?

5	8	11	14	12	2	14	1	10	13	11	6	7	4	13

2. What do you get when you cross a mink with an octopus?

12	7	3	12	11	3	9	12	14	10	13

Factor each polynomial below as the product of its greatest monomial factor and another polynomial. Find your answer and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it. Keep working and you will find out what you get from these "double crosses."

(1) $6x^2 + 9x + 27$

(2) $5x^3 + 30x^2 - 15x$

(3) $14x^3 - 7x^2 - 35x$

(4) $25x^3 - 40x^2 + 10x$

(5) $4x^4 + 20x^3 + 12x^2$

(6) $3x^4 + 12x^2 - 33$

(7) $49x^4 - 14x^3 - 28x$

Answers:

(E) $4x^2(x^2 + 5x + 3)$

(L) $3(x^4 + 6x^2 + 11)$

(O) $7x(2x^2 - x - 5)$

(U) $3(2x^2 + 3x + 9)$

(C) $7x(7x^3 - 2x^2 - 4)$

(K) $5x(5x^2 - 8x + 2)$

(B) $7x(7x^3 + 2x^2 - 3)$

(D) $5x(x^2 + 6x - 3)$

(I) $3(x^4 + 4x^2 - 11)$

(8) $2a^2 + 12ab + 6b^2$

(9) $6a^3 - 18ab$

(10) $3a^2b^2 + 15ab^3$

(11) $8a^4b^4 - 28a^3b^3 + 4a^2b^2$

(12) $6a^4b - 10a^3b^2 - 6a^2b^3$

(13) $7ab^5 - 56ab$

(14) $24ab^4 + 12ab^3 - 18ab^2$

Answers:

(H) $6ab^2(4b^2 - 3b - 2)$

(X) $2(a^2 + 6ab + 3b^2)$

(S) $7ab(b^4 - 8)$

(M) $3ab^2(a + 5b)$

(R) $6ab^2(4b^2 + 2b - 3)$

(N) $4a^2b^2(2a^2b^2 - 9ab + 2)$

(A) $2a^2b(3a^2 - 5ab - 3b^2)$

(F) $6a(a^2 - 3b)$

(T) $4a^2b^2(2a^2b^2 - 7ab + 1)$