Name: Hour:

"Where does a cow go on vacation?"

Factor the following expressions. The answer to each problem will match a letter that will allow you to figure out the joke.

1. $4x + 6$
2. $9x - 3$
3. $xy - 7x$
4. $6x^2 - 3x$
5. $6x^2 - 4x - 14$
6. $-16x + 12$
7. $18x^2 + 27x - 36$
8. $-5x^3 + 25x^2 - 5x$
9. $28x^5 - 35x^4 - 14x^3$
10. $-13x^2 + 7x - 3$

L. $2(x + 3)$

R. $2(3x^2 - 2x - 7)$

I. $3x(2x - 1)$

D. $3(x - 3)$

P. $x(y - 6)$

O. $-4(4x - 3)$

C. $-(13x^2 - 7x + 3)$

W. $-5x(x^2 - 5x + 1)$

G. $3x(x + 2)$

F. $7x^3(4x^2 - 5x - 2)$

O. $3(3x - 1)$

I. $2(2x + 3)$

B. $-4(x + 3)$

N. $x(y - 7)$

A. $9(2x^2 + 3x - 4)$

E. $2(x^2 - x - 6)$

U. $-x(10x^2 - 7x + 3)$

10	6	8	4	9	2	5	3	1	7

Joke #32

Factoring: GCF

CSI MURDER CASE

Early this morning, Mr. Iwanaga was found murdered in his math class. Use the following clues to find out who did it, what weapon, where, and why. The Tulsa police are counting on you!

CLUE 1: The police have come to you (a famous mathematician) to help them crack this case. After you found numerous clues on the body, you were able to determine **where** the crime was committed.

$144x^2 - 108y^2 - 60z^2$

a) bathroom = $2(72x^2 - 54y^2 - 35z^2)$
b) copy room = $4(36x^2 - 27y^2 - 20z^2)$
c) principal's office = $6(24x^2 - 18y^2 - 15z^2)$
d) teacher's lounge = $12(12x^2 - 9y^2 - 5z^2)$

CLUE 2: These items were spattered with blood and vital organs. Examine these items to find out **what** weapon was used to commit this murder.

$-7a^4b^2 - 14a^2b + 21a^3b^3$

a) knife = $-7ab(a^3b + 2a - 3a^2b^2)$
b) rope = $-7a^2b(a^2b + 2 - 3ab^2)$
c) desk = $-7a^2b(a^2b + 2b - 3ab)$
d) chair = $-7a^2b(a^2b + 2ab - 3a^2b)$

CLUE 3: Bloody fingerprints were found in the classroom and on the door handle. Help the police figure out who did it. **HINT**: group and factor GCF.

$4gr - 8r + 3g - 6$

a) Mr. Fite = $(2g - 4)(2r + 42)$
b) Mr. Wright = $(r - 2)(4g + 3)$
c) Mrs. Taylor = $(2r + 3)(2g - 2)$
d) Mrs. Lygea = $(4r + 3)(g - 2)$

CLUE 4: The police are hopeful they can obtain a written confession and need your expert interrogation skills to find out **why** this murder took place. **HINT**: group and factor GCF.

$2mk - 12m + 42 - 7k$

a) The murder was getting revenge = $(m - 7)(2k - 6)$
b) The murder was jealous of Mr. Iwanaga's math abilities = $(m + 7)(k + 6)$
c) The alleged murderer is being framed by a student = $(2m - 7)(k - 6)$
d) The murderer was an OU fan and didn't like OSU fans = $(2k + 7)(m + 6)$