

Name: _____

CSI CASE #1

Hour: _____

The police chief in Tulsa recently came to you asking for assistance with locating \$10MM that went missing from the city's budget. You are a local university math whiz professor who is known for solving cases.

CLUE 1: The police chief typically comes to you (a famous mathematician) when his department has trouble solving cases. After you sorted through some network files for the city of Tulsa, you were able to determine where the crime was committed.

$$96 - 12m + 8(-6m - 7) + 15m - 43$$

- | | |
|-------------------------------------|---|
| a) $-11m - 83$ (parks & recreation) | c) $-45m - 3$ (mayor's office) |
| b) $-21m - 99$ (fire department) | d) None of the above (waste management) |

CLUE 2: Once you determined where this crime took place, you located a suspicious cardboard box with many interesting items. You decided to search the memory chips in these devices for possible clues. After many long hours, you were able to determine what device was used in this crime.

$$-72y - 11 - 14(-3y - 5) - (18y + 51)$$

- | | |
|------------------------------------|--|
| a) $-12y + 8$ (jump/flash drive) | c) $-132y - 132$ (external hard drive) |
| b) $48y - 9$ (camera with SD card) | d) None of the above (phone micro SD card) |

CLUE 3: From your investigation, you were able to determine when this crime took place based on the time and date stamp on each file. After checking with security to see who was in the building that day, you were able to create a mathematical equation to determine who did it.

$$13w - 36 - 9(-5w - 3) - [(2^0 \times 36 \div 4)(2w - 5)]$$

- | | |
|------------------------------------|-----------------------------------|
| a) $32w - 9$ (Fedex guy) | c) $-50w - 18$ (secretary) |
| b) $40w + 36$ (pizza delivery guy) | d) None of the above (accountant) |

CLUE 4: Due to the electronic evidence you collected connecting this crime to someone, the police are hopeful they can obtain a written confession and learn why this person stole the money.

$$-3(7x - 4) - 9x - 2(-42 + 21 \div 3 \times 2^3) + 11$$

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|---|
| a) $-6x + 5$ (duh, it's \$10,000,000) |
| b) $-18x - 17$ (I needed the money to help my family) |
| c) $-30x - 5$ (I couldn't resist) |
| d) None of the above (it was too easy, why not) |

Evaluate the Expressions: Multi-variables

Evaluate the algebraic expressions for the given values of each variable.

1) $z - xy$ at $x = 3, y = 1, z = -2$

2) $\frac{a+b}{3}$ at $a = 5, b = 1$

3) $\frac{pq}{2}$ at $p = 4, q = 5$

4) $3uv$ at $u = -3, v = 2$

5) mn^2 at $m = -3, n = -2$

6) $3s - t$ at $s = 7, t = 5$

7) $b + c - d$ at $b = -2, c = 10, d = 1$

8) $x - 5y$ at $x = 2, y = 3$