Algebraic Expressions can be Evaluated, not solved for (NO EQUAL SIGN).

- We evaluate algebraic expressions by substituting into the variable the given number.
- Rewrite the whole problem with the number replacing the variable.
- Use (parentheses) around the number you plugged in for the variable.
- Simplify using the Order of Operations.
- Your answer will be a number, NO LETTERS SHOULD BE IN YOUR ANSWER.

Example 2: Evaluate where x = 3 , y = – 4 , and z = 6 then simplify. MUST SHOW WORK!

a. $2x - z + y - 5$

$2(3)-(6)+(-4)-5$

$2(3)-6-4-5$

$6-6-4-5$

$0-4-5$

$-4-5$

-9

b. $x^2 + y^2 - 5z$

$(3)^2+(-4)^2-5(6)$

$9+(-4)^2-5(6)$

$9+16-5(6)$

$9+16-30$

$25-30$

-5

c. $-x - y + 4z$

$-(3)-(-4)+4(6)$

$-3+4+4(6)$

$-3+4+24$

$1+24$

25

d. $\frac{3y}{z+4x}$ (works top to bottom!)

$\frac{3(-4)}{(6)+4(3)}$

$\frac{-12}{6+4(3)}$

$\frac{-12}{6+12}$

$\frac{-12}{18}$ → REDUCE → $\frac{-2}{3}$

Example 3: Evaluate where a = – 2 , b = 4 , and c = 3 then simplify. MUST SHOW WORK!

a. $3(c-4)-5(2b+1)$

$3(3)-4)-5(2(4)+1)$

$3(3-4)-5(2(4)+1)$

$3(-1)-5(8+1)$

$3(-1)-5(9)$

$-3-45$

-48

b. $7b-2[8+6(a-1)]$

$7(4)-2[8+6(-2)-1)]$

$7(4)-2[8+6(-2-1)]$

$7(4)-2[8+6(-3)]$

$7(4)-2[8-18]$

$7(4)-2[-10]$

$28+20$

48

c. $8c^2 - 5ab + 4ab - c^2 + 4$

$8(3)^2-5(-2)(4)+4(-2)(4)-(3)^2+4$

$8(9)-5(-2)(4)+4(-2)(4)-(3)^2+4$

$72-5(-2)(4)+4(-2)(4)-9+4$

$72+40+4(-2)(4)-9+4$

$72+40-32-9+4$

75

d. $\frac{-3a(b^2+c)}{6b-2c}$

$\frac{-3(-2)((4)^2+(3))}{6(4)-2(3)}$

$\frac{-3(-2)(16+3)}{6(4)-2(3)}$

$\frac{-3(-2)(19)}{6(4)-2(3)}$

$\frac{114}{6(4)-2(3)}$

$\frac{114}{24-6}$ → $\frac{114}{18}=\frac{19}{3}$