1) Simplifying in Algebra rational fraction:

You can simplify by canceling the common factors, not terms

a) \( \frac{5x-4}{5x+3} \neq \frac{-4}{3} \), Correction: \( \frac{5x-4}{5x+3} \) no more simplify

b) \( \frac{x^2+x-2}{x^2+3x-4} \neq \frac{x-2}{3x-4} \) Correction: \( \frac{x^2+x-2}{x^2+3x-4} = \frac{(x-1)(x+2)}{(x-1)(x+4)} = \frac{(x+2)}{(x+4)} \)

2) The Square of Binomial and the Sum or Difference of squares:

\((x-y)^2 \neq x^2 - y^2\), \((x-y)^2 \neq x^2 + y^2\), \((x+y)^2 \neq x^2 + y^2\)

\(x-y)^2 = x^2 - 2xy + y^2\), \((x+y)^2 = x^2 + 2xy + y^2\)

So, it is wrong if you write \((x-2)^2 = x^2 + 2^2\), or \((x-2)^2 = x^2 - 2^2\)

The correct answer is, \((x-2)^2 = x^2 + 2(x)(-2) + 2^2 = x^2 - 4x + 4\)

\((x+2)^2 = x^2 + 2(x)(2) + 2^2 = x^2 + 4x + 4\)

3) The Quadratic formula:

It is Wrong if you write the formula as the followings:

\[ x = \frac{b \pm \sqrt{b^2 - 4ac}}{2a} \], \[ x = -b \pm \sqrt{b^2 - 4ac} \], \[ x = \frac{-b}{2a} \pm \sqrt{b^2 - 4ac} \]

The correct Quadratic formula is \[ x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \]