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# PRE TEST

1. Here is a list of some algebraic expressions that have been "simplified." Some steps in the simplification processes are correct and some of them are WRONG! For each problem:

   (a) Determine if the simplified result is correct.

   (b) Determine if there are any mistakes made in the simplication process. (NOTE: just because the result is correct does not mean there are no mistakes).

   (c) If there are mistakes, redo the problem correctly. If there are no mistakes, redo the problem with another correct method.

$(i)$
$$\frac{x^2 - 1}{x + 1} = \frac{x^2 + (-1)}{x + 1} = \frac{x^2}{x} + \frac{-1}{1} = x - 1$$

$(ii)$
$$(x + y)^2 - (x - y)^2 = x^2 + y^2 - x^2 - y^2 = 0$$

$(iii)$
$$\frac{9(x - 4)^2}{3x - 12} = \frac{3^2(x - 4)^2}{3x - 12} = \frac{(3x - 12)^2}{3x - 12} = 3x - 12$$

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[0]Turn page. More problems on reverse side.

$(iv)$

$$\frac{x^2 y^5}{2x^{-3}} = x^2 y^5 \cdot 2x^3 = 2x^6 y^5$$

$(v)$

$$\frac{(2x^3 + 7x^2 + 6) - (2x^3 - 3x^2 - 17x + 3)}{(x+8) + (x-8)} = \frac{4x^2 - 17x + 9}{2x} = 2x - 17 + \frac{9}{2x}$$

$(vi)$

$$\frac{x^{-1} + y^{-1}}{x^{-1} - y^{-1}} = \frac{(x+y)^{-1}}{(x-y)^{-1}} = \left(\frac{x+y}{x-y}\right)^{-1} = -\frac{x+y}{x-y} = \frac{x+y}{y-x}.$$