

Still Factorable by a Factor

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When my Elementary Algebra II student, Mark Guerin, attempted to solve the

equation $\frac{1}{x} + \frac{1}{x-3} = -\frac{5}{4}$, he wrote $-4(x-3) - 4x = -5x(x-3)$, writing

-5 instead of 5 . He continued and was able to solve his equation by factoring.

I thought this was interesting because it suggested that one could write two very similar equations, both solvable by factoring, just by changing the sign on the right side. This would be useful to teachers.

In solving the original equation correctly, we would obtain $5x^2 - 15x = -8x + 12$

instead of $5x^2 - 15x = 8x - 12$. In general, we consider $Ax^2 - Bx = -Cx + D$