

Solutions

2.1 The rational equation excludes $x=2$. For allowed x it reduces to $x+2=5$, giving $x=3$, which substitutes correctly. The quadratic is nonpositive between its roots, including them: $-1 \leq x \leq 3$. The composition applies g first: $g(2) = -1$ and $f(g(2)) = 1$. Cancelling a factor does not restore excluded inputs.

3.1 Subtract twice the first equation. In the first system $(a-2)y = 0$: for a not equal to two, $y=0, x=4$, uniquely. For $a=2$, both equations are the same relation, giving every pair $(4-t, t)$. There is no inconsistent case in this first system. With right side nine, $(a-2)y = 1$. For a not equal to two, $y = 1/(a-2)$ and $x = 4 - 1/(a-2)$, uniquely. For $a=2$ it demands $0=1$, so no solution. A zero coefficient row means inconsistency only when the right side is nonzero.

Local review checklist: follow every response instruction; support the answer with the stated evidence; explain rejected alternatives or an opposing view; check scope, restrictions and clarity. For writing, this is a formative checklist, not an official rubric score.