

Solutions

2.1 Solve $2x+3=11$, giving $x=4$.

2.2 Apply g first: $g(4)=16$; then $f(16)=2 \times 16+3=35$.

2.3 Substitute into the square root: $\sqrt{(11-2)}=\sqrt{9}=3$.

2.4 False. Squaring can introduce extraneous solutions. Restricting a parabola's domain is essential before claiming an inverse. A horizontal translation inside f has the opposite sign to the graph's movement.

2.5 A The set of allowed inputs to a function.

3.1 Composite $= (x-3)^2$ with $x \geq 3$ because $g(x)$ must lie in f 's domain. Inverse $16=4$. Without restriction x^2 is not one-to-one and the inverse would not be a function on the full real domain.