



Fill In The Blanks...



Inverse Three-Step Functions

Question	Function Machines	Answer
$f(x) = \frac{2x + 3}{5}$ Find $f^{-1}(x)$	$x \rightarrow \begin{array}{ c } \hline \times 2 \\ \hline \end{array} \rightarrow \begin{array}{ c } \hline +3 \\ \hline \end{array} \rightarrow \begin{array}{ c } \hline \div 5 \\ \hline \end{array} \rightarrow f(x)$ $f^{-1}(x) \leftarrow \begin{array}{ c } \hline \div 2 \\ \hline \end{array} \leftarrow \begin{array}{ c } \hline -3 \\ \hline \end{array} \leftarrow \begin{array}{ c } \hline \times 5 \\ \hline \end{array} \leftarrow x$	$f^{-1}(x) = \frac{5x - 3}{2}$
$f(x) = 4x^2 - 5$ Find $f^{-1}(x)$	$x \rightarrow \begin{array}{ c } \hline \text{square} \\ \hline \end{array} \rightarrow \begin{array}{ c } \hline \times 4 \\ \hline \end{array} \rightarrow \begin{array}{ c } \hline -5 \\ \hline \end{array} \rightarrow f(x)$ $f^{-1}(x) \leftarrow \begin{array}{ c } \hline \text{square root} \\ \hline \end{array} \leftarrow \begin{array}{ c } \hline \div 4 \\ \hline \end{array} \leftarrow \begin{array}{ c } \hline +5 \\ \hline \end{array} \leftarrow x$	$f^{-1}(x) = \sqrt{\frac{x + 5}{4}}$
$f(x) = 2\sqrt{x} + 1$ Find $f^{-1}(x)$	$x \rightarrow \begin{array}{ c } \hline \text{square root} \\ \hline \end{array} \rightarrow \begin{array}{ c } \hline \times 2 \\ \hline \end{array} \rightarrow \begin{array}{ c } \hline +1 \\ \hline \end{array} \rightarrow f(x)$ $f^{-1}(x) \leftarrow \begin{array}{ c } \hline \text{square} \\ \hline \end{array} \leftarrow \begin{array}{ c } \hline \div 2 \\ \hline \end{array} \leftarrow \begin{array}{ c } \hline -1 \\ \hline \end{array} \leftarrow x$	$f^{-1}(x) = \left(\frac{x - 1}{2}\right)^2$
$f(x) = \left(\frac{x - 3}{2}\right)^2$ Find $f^{-1}(x)$	$x \rightarrow \begin{array}{ c } \hline -3 \\ \hline \end{array} \rightarrow \begin{array}{ c } \hline \div 2 \\ \hline \end{array} \rightarrow \begin{array}{ c } \hline \text{square} \\ \hline \end{array} \rightarrow f(x)$ $f^{-1}(x) \leftarrow \begin{array}{ c } \hline +3 \\ \hline \end{array} \leftarrow \begin{array}{ c } \hline \times 2 \\ \hline \end{array} \leftarrow \begin{array}{ c } \hline \text{square root} \\ \hline \end{array} \leftarrow x$	$f^{-1}(x) = 2\sqrt{x} + 3$
$g(x) = \frac{4}{x} - 3$ Find $g^{-1}(x)$	$x \rightarrow \begin{array}{ c } \hline \text{reciprocal} \\ \hline \end{array} \rightarrow \begin{array}{ c } \hline \times 4 \\ \hline \end{array} \rightarrow \begin{array}{ c } \hline -3 \\ \hline \end{array} \rightarrow g(x)$ $g^{-1}(x) \leftarrow \begin{array}{ c } \hline \text{reciprocal} \\ \hline \end{array} \leftarrow \begin{array}{ c } \hline \div 4 \\ \hline \end{array} \leftarrow \begin{array}{ c } \hline +3 \\ \hline \end{array} \leftarrow x$	$g^{-1}(x) = \frac{1}{4(x + 3)}$