

Do Now

aka: Roots, solutions, x-intercepts

Find the zeros of the following functions:

<p>1) $x^2 + 3x - 18 = 0$</p> $(x + 6)(x - 3) = 0$ <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">$x + 6 = 0$</td> <td style="padding: 5px;">$x - 3 = 0$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$\begin{array}{r} x + 6 = 0 \\ -6 -6 \\ \hline \end{array}$</td> <td style="padding: 5px;">$\begin{array}{r} x - 3 = 0 \\ +3 +3 \\ \hline \end{array}$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$\boxed{x = -6}$</td> <td style="padding: 5px;">$\boxed{x = 3}$</td> </tr> </table> <p style="text-align: center;">$\{-6, 3\}$</p> <p style="text-align: center;">Quadratic</p>	$x + 6 = 0$	$x - 3 = 0$	$\begin{array}{r} x + 6 = 0 \\ -6 -6 \\ \hline \end{array}$	$\begin{array}{r} x - 3 = 0 \\ +3 +3 \\ \hline \end{array}$	$\boxed{x = -6}$	$\boxed{x = 3}$	<p>2) $(x + 4)(x - 8) = 0$</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">$x + 4 = 0$</td> <td style="padding: 5px;">$x - 8 = 0$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$\begin{array}{r} x + 4 = 0 \\ -4 -4 \\ \hline \end{array}$</td> <td style="padding: 5px;">$\begin{array}{r} x - 8 = 0 \\ +8 +8 \\ \hline \end{array}$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$\boxed{x = -4}$</td> <td style="padding: 5px;">$\boxed{x = 8}$</td> </tr> </table> <p style="text-align: center;">$\{-4, 8\}$</p> <p style="text-align: center;">Quadratic</p>	$x + 4 = 0$	$x - 8 = 0$	$\begin{array}{r} x + 4 = 0 \\ -4 -4 \\ \hline \end{array}$	$\begin{array}{r} x - 8 = 0 \\ +8 +8 \\ \hline \end{array}$	$\boxed{x = -4}$	$\boxed{x = 8}$				
$x + 6 = 0$	$x - 3 = 0$																
$\begin{array}{r} x + 6 = 0 \\ -6 -6 \\ \hline \end{array}$	$\begin{array}{r} x - 3 = 0 \\ +3 +3 \\ \hline \end{array}$																
$\boxed{x = -6}$	$\boxed{x = 3}$																
$x + 4 = 0$	$x - 8 = 0$																
$\begin{array}{r} x + 4 = 0 \\ -4 -4 \\ \hline \end{array}$	$\begin{array}{r} x - 8 = 0 \\ +8 +8 \\ \hline \end{array}$																
$\boxed{x = -4}$	$\boxed{x = 8}$																
<p>3) $(x - 2)(x^2 - 9) = 0$</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">$x - 2 = 0$</td> <td style="padding: 5px;">$x^2 - 9 = 0$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$\begin{array}{r} x - 2 = 0 \\ +2 +2 \\ \hline \end{array}$</td> <td style="padding: 5px;">$\begin{array}{r} x^2 - 9 = 0 \\ +9 +9 \\ \hline \end{array}$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$\boxed{x = 2}$</td> <td style="padding: 5px;">$\sqrt{x^2 = 9}$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">$\boxed{x = \pm 3}$</td> </tr> </table> <p style="text-align: center;">$\{-3, 2, 3\}$</p> <p style="text-align: center;">Cubic</p>	$x - 2 = 0$	$x^2 - 9 = 0$	$\begin{array}{r} x - 2 = 0 \\ +2 +2 \\ \hline \end{array}$	$\begin{array}{r} x^2 - 9 = 0 \\ +9 +9 \\ \hline \end{array}$	$\boxed{x = 2}$	$\sqrt{x^2 = 9}$		$\boxed{x = \pm 3}$	<p>4) $(x^2 - 25)(x + 5) = 0$</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">$x^2 - 25 = 0$</td> <td style="padding: 5px;">$x + 5 = 0$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$\begin{array}{r} x^2 - 25 = 0 \\ +25 +25 \\ \hline \end{array}$</td> <td style="padding: 5px;">$\begin{array}{r} x + 5 = 0 \\ -3 -3 \\ \hline \end{array}$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$\sqrt{x^2 = 25}$</td> <td style="padding: 5px;">$\boxed{x = -3}$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$\boxed{x = \pm 5}$</td> <td style="padding: 5px;"></td> </tr> </table> <p style="text-align: center;">$\{-5, -3, 3\}$</p> <p style="text-align: center;">Cubic</p>	$x^2 - 25 = 0$	$x + 5 = 0$	$\begin{array}{r} x^2 - 25 = 0 \\ +25 +25 \\ \hline \end{array}$	$\begin{array}{r} x + 5 = 0 \\ -3 -3 \\ \hline \end{array}$	$\sqrt{x^2 = 25}$	$\boxed{x = -3}$	$\boxed{x = \pm 5}$	
$x - 2 = 0$	$x^2 - 9 = 0$																
$\begin{array}{r} x - 2 = 0 \\ +2 +2 \\ \hline \end{array}$	$\begin{array}{r} x^2 - 9 = 0 \\ +9 +9 \\ \hline \end{array}$																
$\boxed{x = 2}$	$\sqrt{x^2 = 9}$																
	$\boxed{x = \pm 3}$																
$x^2 - 25 = 0$	$x + 5 = 0$																
$\begin{array}{r} x^2 - 25 = 0 \\ +25 +25 \\ \hline \end{array}$	$\begin{array}{r} x + 5 = 0 \\ -3 -3 \\ \hline \end{array}$																
$\sqrt{x^2 = 25}$	$\boxed{x = -3}$																
$\boxed{x = \pm 5}$																	