

COUNTDOWN Challenge

Solving Quadratic Equations

Complete the table and then make the observations listed below.

Expanded form equations	Factored form equations	Equations	Solutions
$x^2 + 6x - 16 = 0$	$(x + 8)(x - 2) = 0$	$x + 8 = 0$ $x - 2 = 0$	-8 or 2
$x^2 - 8x - 20 = 0$	$(x + 2)(x - 10) = 0$	$x + 2 = 0$ $x - 10 =$	
$x^2 + 10x + 21 = 0$	$(x + 7)(\quad) = 0$	$x + 7 = 0$ $x + 3 =$	
$x^2 + 4x + 3 = 0$	$(x + \quad)(x + \quad) = 0$	$x + 3$ $x +$	
$x^2 + 5x + 6 = 0$	$(x + \quad)(x + \quad) = 0$		
$x^2 - 7x + 10 = 0$	$(x - \quad)(x - \quad) = 0$		
$x^2 - 7x + 12 = 0$	$(\quad)(\quad) = 0$		
$x^2 - x - 12 = 0$	$(\quad)(\quad) = 0$		
$x^2 + x - 12 = 0$	$(\quad)(\quad) = 0$		
$x^2 + 7x + 12 = 0$	$(\quad)(\quad) = 0$		

Look at the Factored form equations and your solutions. Can you see a pattern?

What can you say about the factored form if the solutions are both positive?

What can you say about the factored form if the solutions are both negative?

What can you say about the factored form if the solutions are negative and positive?