

$$\frac{x^2+x+1}{x^2+1} = \frac{x+5}{x+3}$$

$$\Rightarrow \frac{x^2+x+1}{x^2+1} = x+3$$

$$\frac{x^2+x+1}{x^2+1} \times x+3 = 0$$

$$\frac{x^2+x+1}{x^2+1} \times x+3 \times \frac{x+5}{x^2+1} = 0$$

$x$	$-3$	$x^2+1$	$x^2+x$
$x^2+x+1$	+	+	+
$x+3$	-	+	+
$\frac{x+5}{x^2+1}$	-	-	+
$0$	+	-	+

$$x^2+x+1=0$$

$$x^2+x=-1$$

$$x+3=0$$

$$x=-3$$

$$\frac{x+5}{x^2+1} = 0$$

$$x+5 = x^2+1$$

$$x = x^2+4$$