

Problem 8: Find x such that $x(2-x)(1-x) < 0$, by first studying the sign of each term in the product and then filling in a sign table.

$$x \geq 0 \text{ WHEN } x \geq 0$$

$$2-x \geq 0 \text{ WHEN } x \leq 2$$

$$1-x \geq 0 \text{ WHEN } x \leq 1$$

	$-\infty$	0	1	2	$+\infty$		
x	-	0	+	+	+		
$2-x$	+	+	+	0	-		
$1-x$	+	+	0	-	-		
$x(2-x)(1-x)$	-	0	+	0	-	0	+

So $x(2-x)(1-x) < 0$ WHEN

x IS IN $(-\infty, 0) \cup (1, 2)$.