

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

$$x \geq 0 \Rightarrow x \geq 0$$

$$x-1 \geq 0 \Rightarrow x \geq 1$$

$$1-2x \geq 0 \Rightarrow x \leq \frac{1}{2}$$

	$-\infty$	0	$\frac{1}{2}$	1	$+\infty$
x	-	0	+	+	+
$x-1$	-	-	-	0	+
$1-2x$	+	+	0	-	-
$x(x-1)(1-2x)$	+	0	-	0	-

$x(x-1)(1-2x) < 0$ WHEN x IS IN :

$$\boxed{\left(0, \frac{1}{2}\right) \cup (1, +\infty)}$$