Week 2 PBL: Exercises

1. What is the tightest (min,max) integer bounds for each node of this TIP program?

TIP Program	x	y
`if (x>0) { #`	(1 , +inf)	(-inf, +inf)
`y = 10*x;#`	(1 , +inf)	(10 , +inf)
`} else {#`	(-inf, 0)	(-inf, +inf)
`Y = 0;#`	(-inf, 0)	0,0
`}#`	(-inf, +inf)	(0 , +inf)
`return y;#`		

2. Now: What are the tightest abstract 'Sign' values we can give to each variable?

TIP Program	x	y
`if (x>0) {`	+	(-inf, +inf)
`y = 10*x;`	+	+
`} else {`	T	T
`Y = 0;`	T	0
`}`	T	T
`return y;`		

3. Simplify the Sign constraints on Slide 21 to find the final Sign of c?