

CSCI 2330 – Integer Exercises

Let x be an arbitrary signed int and let ux be an arbitrary unsigned int. For each of the statements below, decide whether the statement is always true or possibly false. If the latter, demonstrate with a counterexample.

1. $x < 0$ implies $(x * 2) < 0$
2. $ux \geq 0$
3. $ux > -1$
4. $x > y$ implies $-x < -y$
5. $x > 0 \ \&\& \ y > 0$ implies $x + y > 0$
6. $x \geq 0$ implies $-x \leq 0$
7. $x \leq 0$ implies $-x \geq 0$
8. $(x \mid -x) \gg 31 == -1$
9. $x \ \& \ 7 == 7$ implies $(x \ll 30) < 0$