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CS33 HW1 Nowatski

2.72.

A. Why is the conditional always true?

The value maxbytes-sizeof(val) will be >= 0 always because “maxbytes” in this situation is a signed int (by default) and “sizeof(val)” is a function that returns an unsigned int. When these values are subtracted from one another the unsigned int “overpowers” the signed int, implicitly casting it to unsigned. This conditional will therefore always be true because the left-hand value will be unsigned, meaning it is never negative and therefor never >= 0.

B. How can the conditional be rewritten?

By explicitly casting sizeof(val) to a signed int like so: (int) sizeof(val)

2.78.

//Code to divide by a power of 2 with correct rounding and following rules on pg 128

int divide\_power2(int x, int k)

//use a shift

x>>k

2.82.

Does the following expression always yield 1? If not, give an example that yields 0.

A. No, it doesn’t. In the case of x or y being Tmin, this would yield 0.

B. Yes, the values will always be equal.

C. Yes, the values will always be equal.

D. Yes, the values will always be equal.

E. Yes, the values will always be equal.