Problem 10. (8 points):

Consider the following 5-bit floating point representation based on the IEEE floating point format:

- There is a sign bit in the most significant bit.

- The next two bits are the exponent. The exponent bias is 1.

- The last two bits are the significand.

The rules are like those in the IEEE standard (normalized, denormalized, representation of 0, ∞, and NAN). As described in Class 10, the floating point format encodes numbers in a form:

$$(-1)^s \times m \times 2^E$$

where m is the *mantissa* and E is the exponent. The table below enumerates the entire non-negative range for this 5-bit floating point representation. Fill in the blank table entries using the following directions:

E: The integer value of the exponent.

m: The fractional value of the mantissa. **Your answer must be expressed as a fraction of the form $x/4$.**

Value: The numeric value represented. **Your answer must be expressed as a fraction of the form $x/4$.**

You need not fill in entries marked "—".

Bits	E	m	Value
0 00 00	—	—	0
0 00 01			
0 00 10			
0 00 11			
0 01 00			
0 01 01			
0 01 10			
0 01 11			
0 10 00	1	4/4	8/4
0 10 01			
0 10 10			
0 10 11			