Fun with Probability
(Due December 18, 2023)

Let

```
bool flip()
```

return `true` with probability 0.5. Write a function

```
bool flip(unsigned long a, unsigned long b)
```

that returns `true` with probability a/b ($0 \leq a \leq b$). Your function's should be deterministic except for its calls to flip() and it should require O(1) calls, regardless of the size of a and b.