

```
unsigned int atomicInc(unsigned int* address,  
                        unsigned int val);
```

reads the 32-bit word **old** located at the address **address** in global or shared memory, computes $((\mathbf{old} \geq \mathbf{val}) ? 0 : (\mathbf{old} + 1))$, and stores the result back to memory at the same address. These three operations are performed in one atomic transaction. The function returns **old**.