Distributed Algorithms CPSC-561
Assignment 2

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For all of the following algorithms, they are each wait-free, as they do not contain a loop.

Algorithm 1 CAS from SCAS

```
1: function CAS_p(old,new)
2:     SCAS.scas(< p, old >, < p, new>)
3:     < p', new'> = SCAS.read()
4:     return { (p' = p) AND (new' = new) }
5: end function
```

Algorithm 2 SCAS from CAS

```
1: function SCAS_p(old,new)
2:     < p', oldValue > = CAS.read()
3:     CAS.cas(< p, old >, < p, new>)
4:     return oldValue
5: end function
```

Algorithm 3 CAS from LL/SC

```
1: function CAS_p(old, new)
2:     old' = LL/SC.LL();
3:     if old' ≠ old then
4:         return false
5:     end if
6:     return LL/SC.SC(new)
7: end function
```

2 Consensus

3 SRSW