Reducing LVM:
First unmount the ‘test’ LVM. and Check for any errors in filesystem.

```
$ sudo umount /mnt/test

$ sudo e2fsck -f /dev/my_vg/test
e2fsck 1.45.6 (20-Mar-2020)
Pass 1: Checking inodes, blocks, and sizes
Pass 2: Checking directory structure
Pass 3: Checking directory connectivity
Pass 4: Checking reference counts
Pass 5: Checking group summary information
/dev/my_vg/test: 11/655360 files (0.0% non-contiguous), 8562/2621440 blocks
```

Resizing the filesystem by 1GB.

```
$ sudo resize2fs /dev/my_vg/test 1G
resize2fs 1.45.6 (20-Mar-2020)
Resizing the filesystem on /dev/my_vg/test to 262144 (4k) blocks.
The filesystem on /dev/my_vg/test is now 1G.
```

Reducing the test lvm by 1GB.

```
$ sudo lvreduce -L 1G /dev/my_vg/test
  WARNING: Reducing active logical volume to 1.00 GiB.
  THIS MAY DESTROY YOUR DATA (filesystem etc.)
  Logical volume "test" successfully resized.
```

Now, check the Volume Group,

```
$ sudo vgs
  VG     #PV #LV #SN Attr   VSize   VFree
  my_vg    1   2   0 wz--n- 10.00g  1.00g
```

Extending ‘production’ lvm by 1Gb. And resizing the filesystem of ‘production’ lvm.

```
$ sudo lvextend -L +1G /dev/my_vg/production
  Size of logical volume my_vg/production changed from 2.00 GiB to 3.00 GiB.
  Logical volume my_vg/production successfully resized.

$ sudo resize2fs /dev/my_vg/production
resize2fs 1.45.6 (20-Mar-2020)
Resizing the filesystem on /dev/my_vg/production to 786432 (4k) blocks.
The filesystem on /dev/my_vg/production is now 3.00G.
```

Mounting the test lvm to ‘/mnt/test’ and checking the size of test and production.

```
$ sudo mount /dev/my_vg/test /mnt/test

$ df -h | grep my_vg
/dev/mapper/my_vg-test        1.0G   24M  976M   2% /mnt/test
/dev/mapper/my_vg-production  3.0G   30M  2.9G   1% /mnt/production
```