Assignment #7 Bounded Producer and Consumer

This assignment tasks students with managing the producer and consumer problem. This is similar to assignment 6, but with the addition of a bounded (finite) buffer. Utilize the Little Book of Semaphores, specifically Chapter 4.1.4 – 4.1.6, to assist you with understanding and handling the consumer/producer issue. To complete this assignment, you should:

* Accept three arguments form the command line (30%)
  + First argument is number of producer threads
  + Second argument is number of consumer threads
  + Third is the size of the buffer
    - You may use a vector as a buffer
  + Producers create widgets and put them on the buffer if there is space. Consumers eat widgets, if there is a widget to eat and remove them from the buffer.
* Ensure that your program can produce at least 10 items, then consume those ten items successfully, without deadlock or crashing (30%)
* Display the results utilizing the standard display and/or output.txt (20%)
* Exit the program successfully once you have produced and consumed 10 items (20%)

Save your program file as 6.cpp. Each of the bold bullets are worth the listed percentage.  
  
**Due date: Tuesday, October 17th, by 11:59 PM**