```
/* program readersandwriters */
int   readcount, writecount;
semaphore x = 1, y = 1, z = 1, wsem = 1, rsem = 1;
void reader()
{
    while (true) {
      semWait (z);
          semWait (rsem);
              semWait (x);
                  readcount++;
                  if (readcount == 1) semWait (wsem);
              semSignal (x);
          semSignal (rsem);
      semSignal (z);
      READUNIT();
      semWait (x);
          readcount--;
          if (readcount == 0) semSignal (wsem);
      semSignal (x);
    }
}
void writer ()
{
    while (true) {
      semWait (y);
          writecount++;
          if (writecount == 1) semWait (rsem);
      semSignal (y);
      semWait (wsem);
      WRITEUNIT();
      semSignal (wsem);
      semWait (y);
          writecount--;
          if (writecount == 0) semSignal (rsem);
      semSignal (y);
    }
}
void main()
{
    readcount = writecount = 0;
    parbegin (reader, writer);
}
```

**Figure 5.26   A Solution to the Readers/Writers Problem Using
Semaphores: Writers Have Priority**